

GEORGE ENGELMANN  
BOTANICAL NOTEBOOKS

*Pagination Note:*

*Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.*



*Leucosia polyrhiza*

July 9 1869

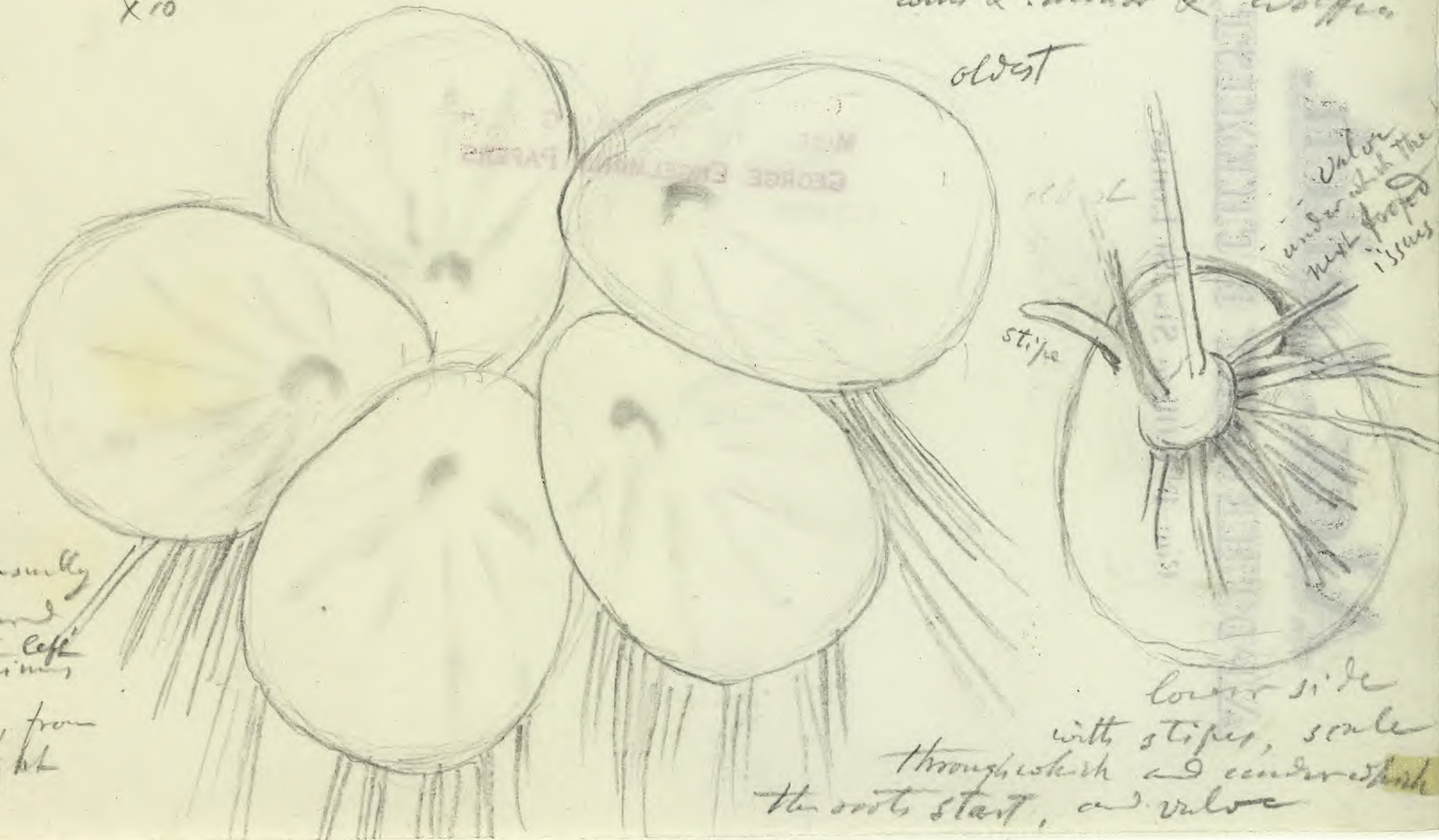
San. Cotton

with *L. minor* & *Wolfii*

X 10

latest

oldest



arrangement usually  
as here figured  
for light top left  
but sometimes  
the reverse, from  
left to right

lower side  
with stipes, scale  
through which and under which  
the roots start, and valve



0 1 2 3 4 5 6 7 8 9 10

cm

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GARDEN



**Alex. Leitch,**  
**APOTHECARY & CHEMIST,**

Cor. 4<sup>th</sup> & Olive Sts., St. Louis.

7792

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0  
cm

1

2

3

4

5

6

7

8

9

10

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GARDEN



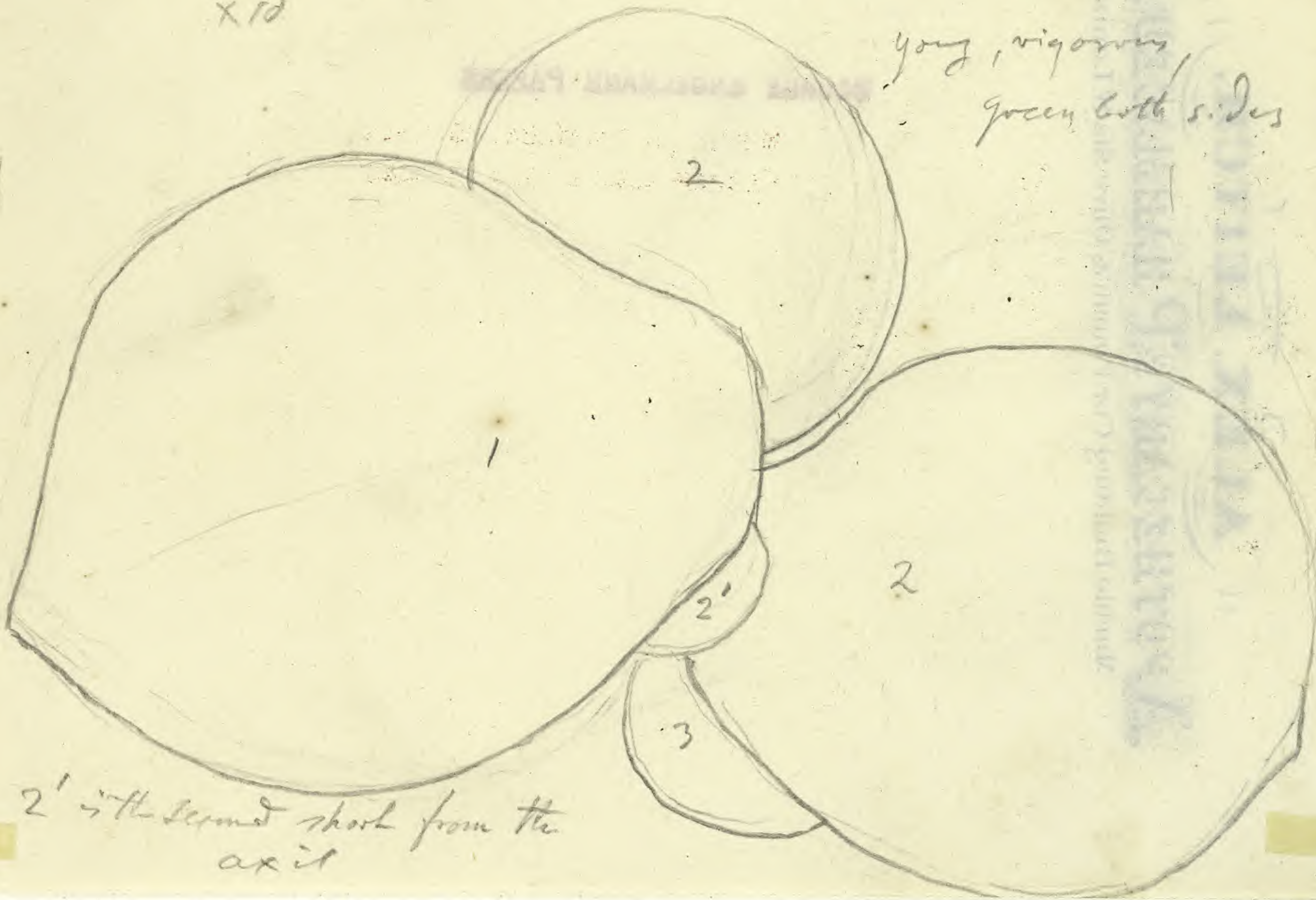
*Lemna polyrrhiza*

Aug 9 1867

Old Quarries, near Mount, St Louis

x 10

young, vigorous,  
green both sides



2' is the second shoot from the  
axil



0 1 2 3 4 5 6 7 8 9 10

cm

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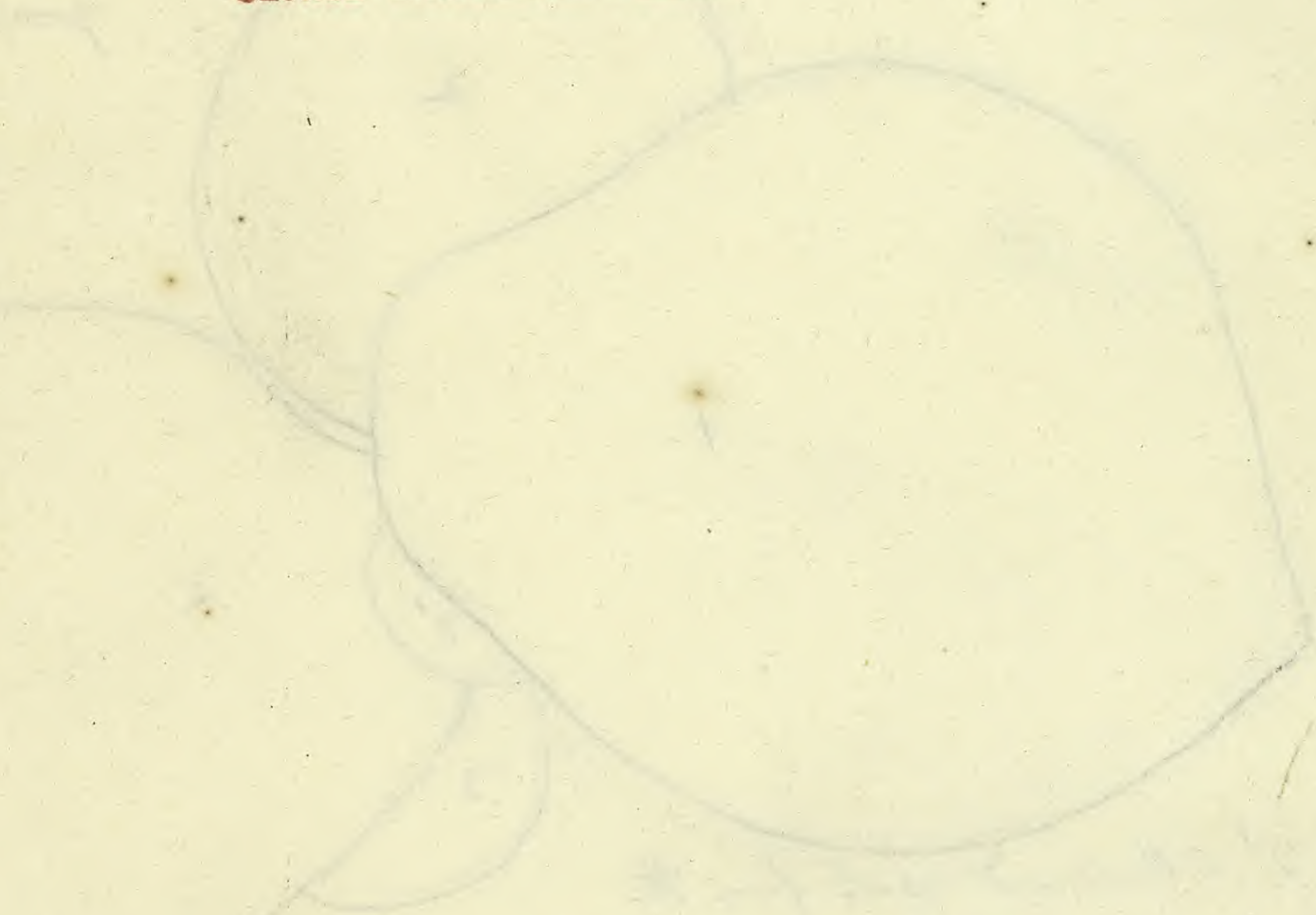
7793

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APOTHECARY & PHARMACEUTIST,

Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.



0 1 2 3 4 5 6 7 8 9 10

cm

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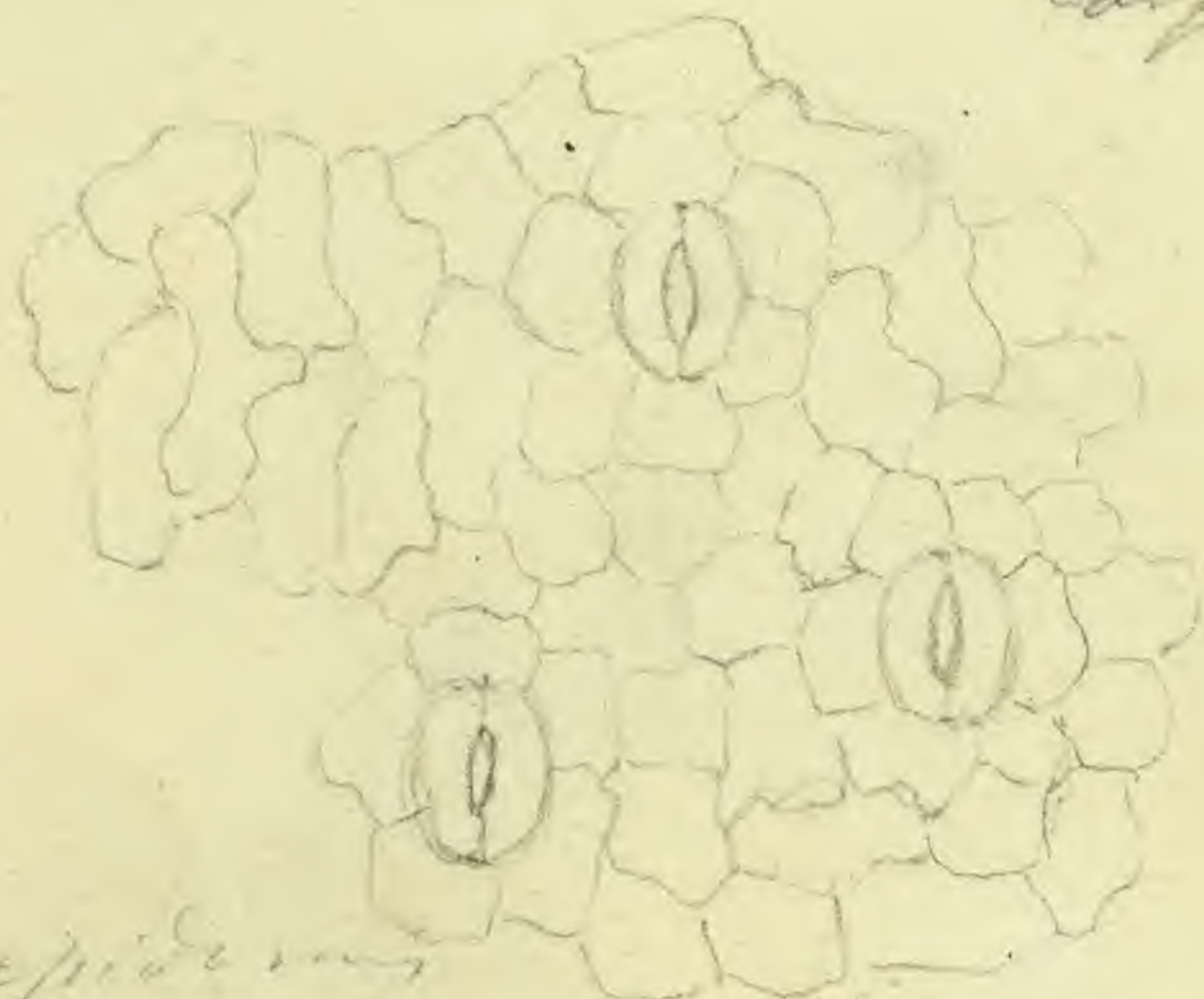
*Sesuvium polyrrhiza*

Oct 21 1867

near S. W. creek Sept 26 1867

large, rather thick, flat

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x 280



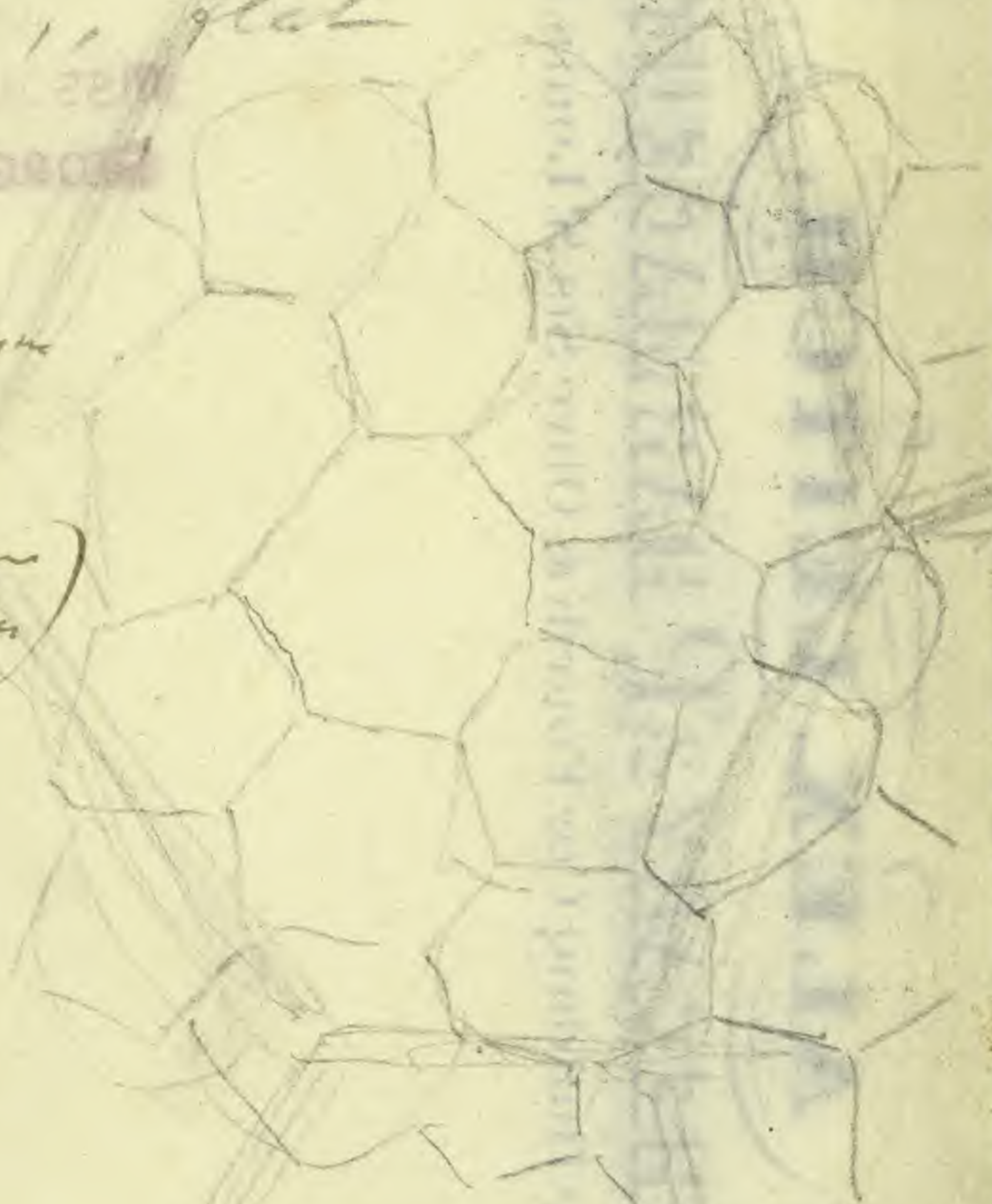
epidermis  
of upper surface, cells scarcely sinuous

stomata 0.22 - 0.25 mm

long

(= *Utricularia* figs)

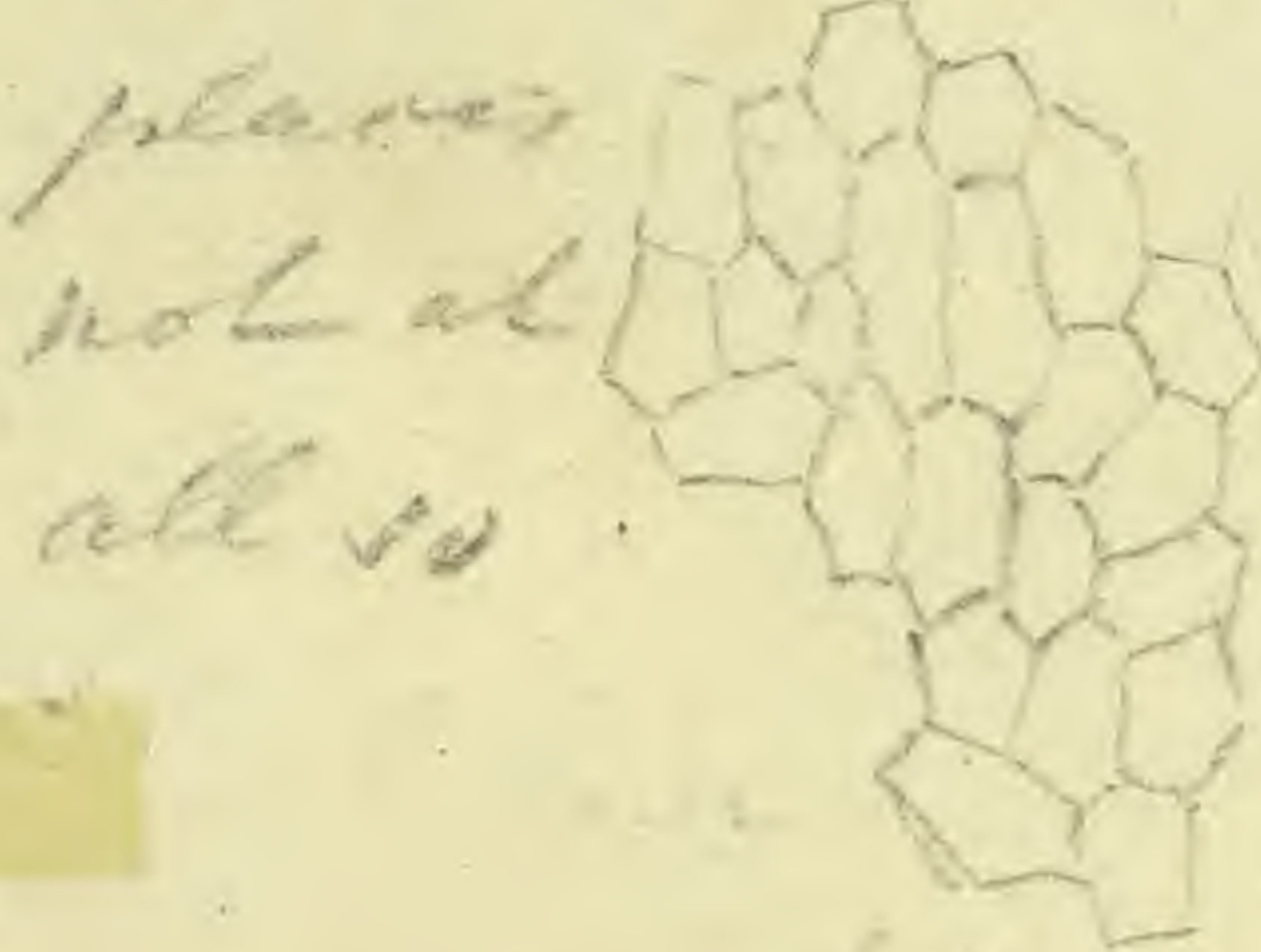
0.20 - 0.23 mm



parenchyma, all  
and air cavity

one of the  
nerves of  
the leaf

epidermis of lower surface  
cells more sinuous, but in some  
places



not at  
all so



0 1 2 3 4 5 6 7 8 9 10

cm

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0 1 2 3 4 5 6 7 8 9 10

cm

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84

*Editorial.*

be followed with tubercle. . . . I might carry the practical good accruing from these experiments much farther, but for the present I must content myself with this imperfect and hasty reference.

*SURGICAL TREATMENT OF DISEASES OF THE UTERUS.*

We take pleasure in publishing, by request of Prof. Pallen, the following interesting letter from Dr. CABELL, the distinguished Professor of Surgery in the University of Virginia.

UNIVERSITY OF VIRGINIA, October 22, 1868.

PROF. M. M. PALLEN, M.D.

*My Dear Sir,*—I have received your communication in which you request me to answer the following questions:

“1st. What are your (my) views as regards surgical treatment of diseases of the uterus, such as retro-flexion and ante-flexion, as proposed by Dr. MARION SIMS?”

“2d. Are such operations as sections of the uterine neck ever required?”

Presuming that you have been induced to ask for my views in con-

*L polytricha  
fertilis*

*W York  
Wm H Leggett  
1870*

20-24



0 1 2 3 4 5 6 7 8 9 10

cm

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*Editorial.*

were introduced into the general circulation through the jugular vein. He says that he was much struck with the rapidity with which death ensued,—all dying within a week or ten days after the operation; and in some were found tubercula, in which the *cheesy* matter had been placed, and vice versa. The results of this experiment led him to conclude that there was something more than what was contained in the tubercle, or in the cheesy product, that increased the rapidity in the production of the same. He therefore opened the jugular vein, introducing *nothing*; but merely closing it as before; the animals all died. An examination was made, and both tubercle and also this same cheesy production were found. Here we have tubercula, the result of *irritation*; and this is the starting point in negating the specificity of tubercle.

He now began a series of experiments with foreign bodies which act as irritants. He introduced gutta percha into the abdominal cavity, as he had done the tubercle and the cheesy matter before; the result was the same, the animal living about as long as those in which the above experiments had been made: tubercle was found in the abdominal viscera, as also in the diaphragm and lungs. An examination of the foreign body gave the following:—the gutta percha was found encapsulated; on the inner face of the capsule were found small proliferations of the lymphatic vessels which



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cm

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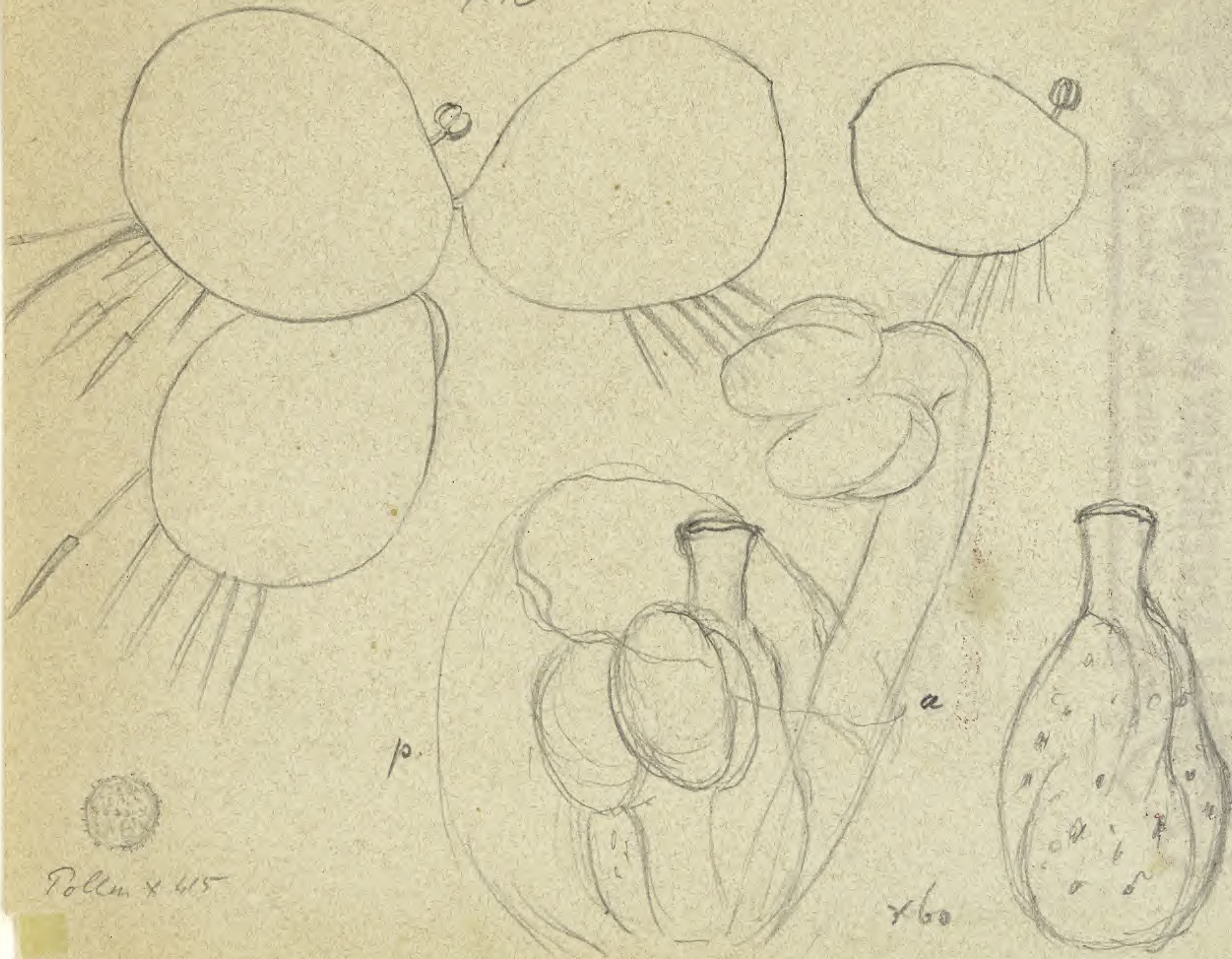
*Lesqueris polyrrhiza*

N York, W. H. Leggett. Aug 1870

Aug 19

1870

x 10



Pollen x 415

x 60



0 1 2 3 4 5 6 7 8 9 10

cm

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0 1 2 3 4 5 6 7 8 9 10

cm

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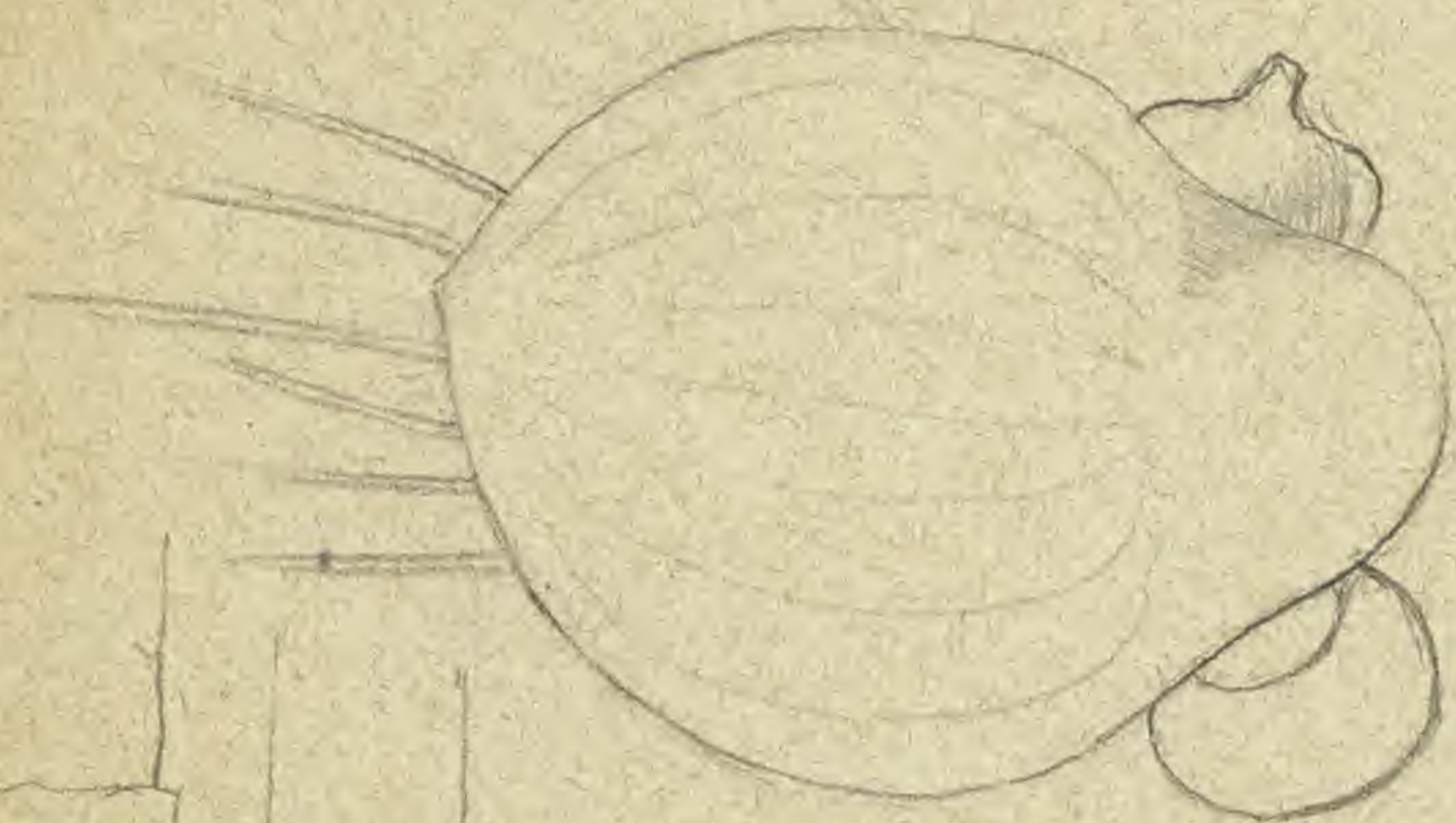
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*Lemna polyrrhiza* Sargent, New York  
Aug 1870

Aug 16-19 1870

x 10



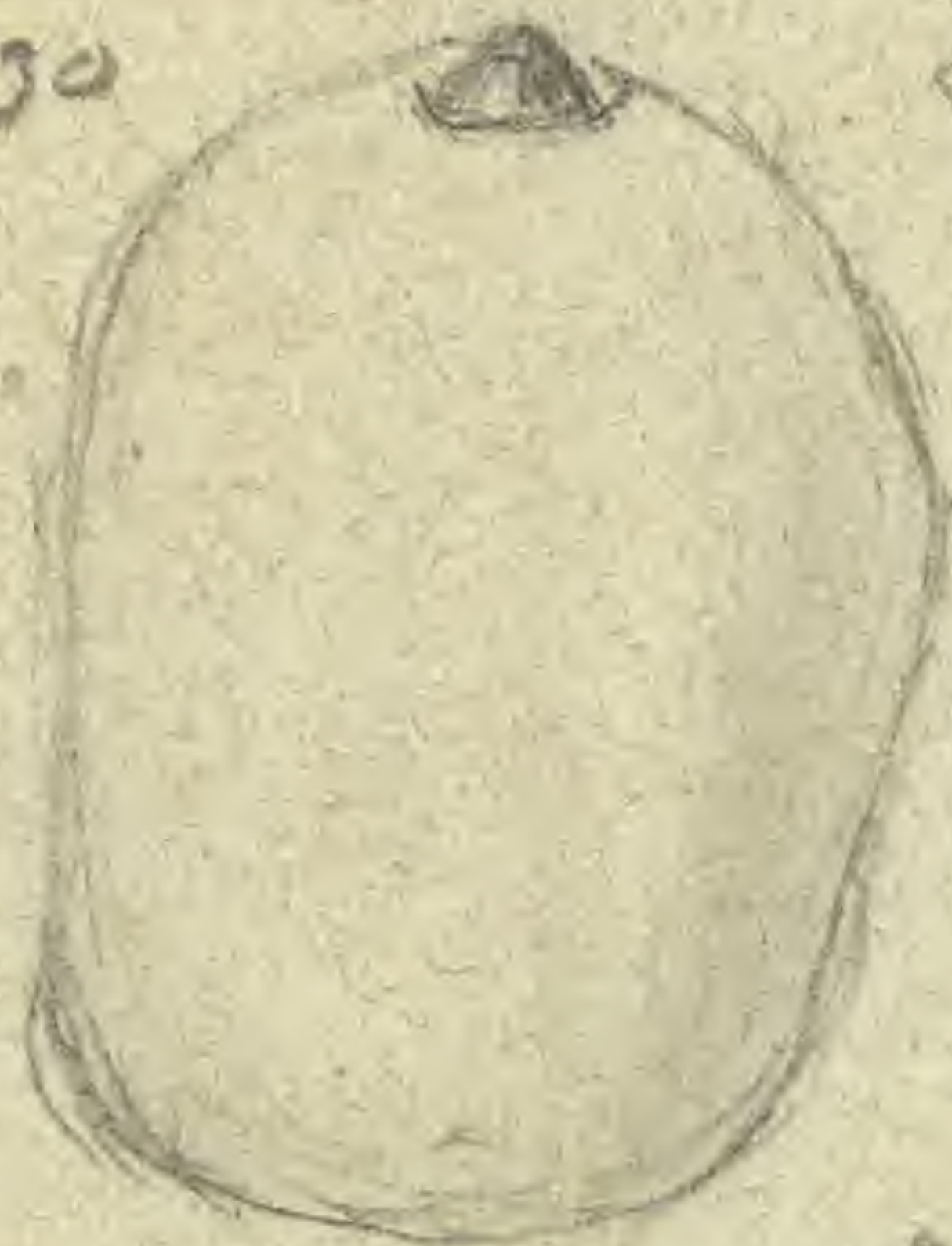
x 30

unripe fruit

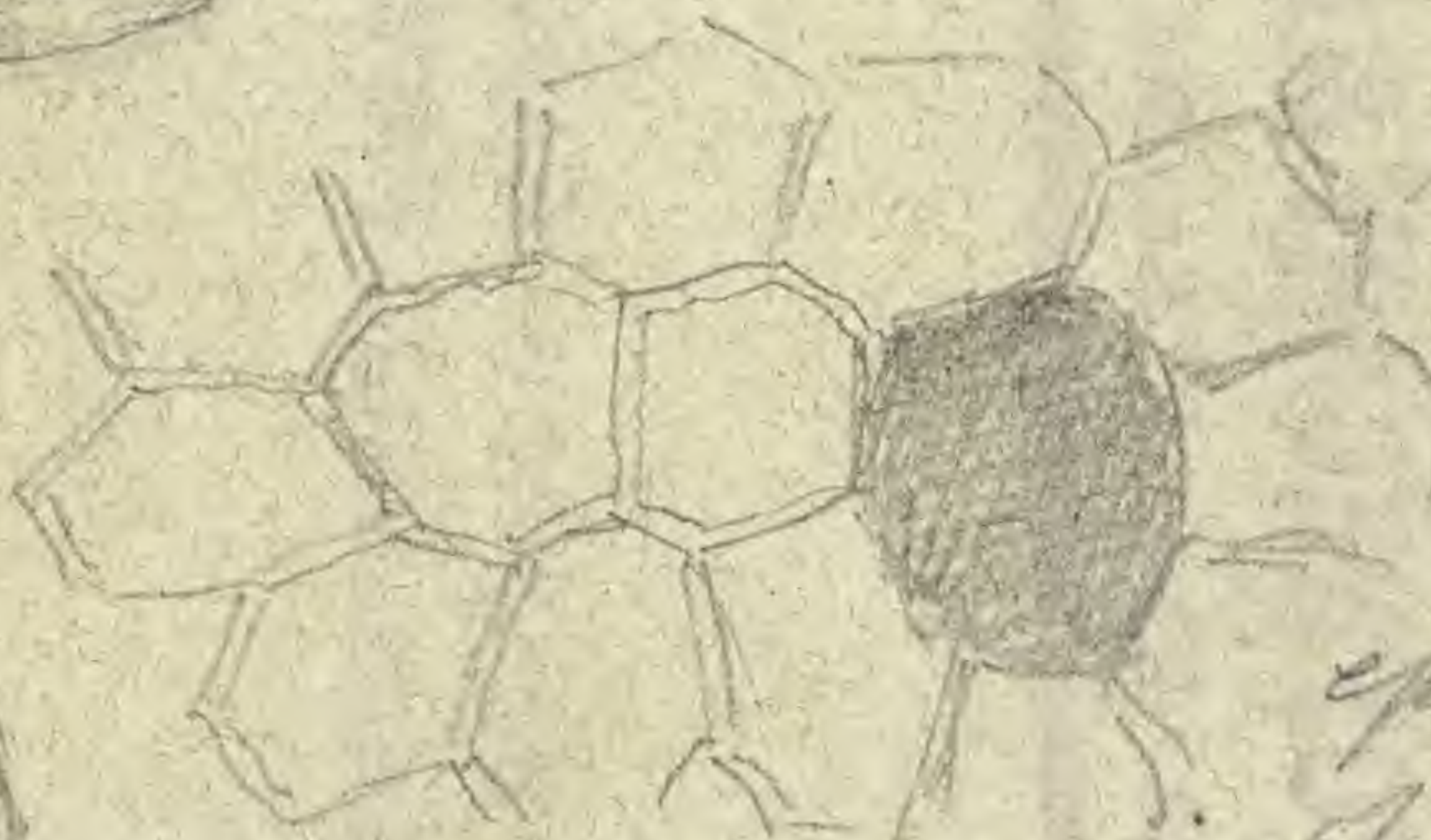


x 30

chlozo



unripe seed



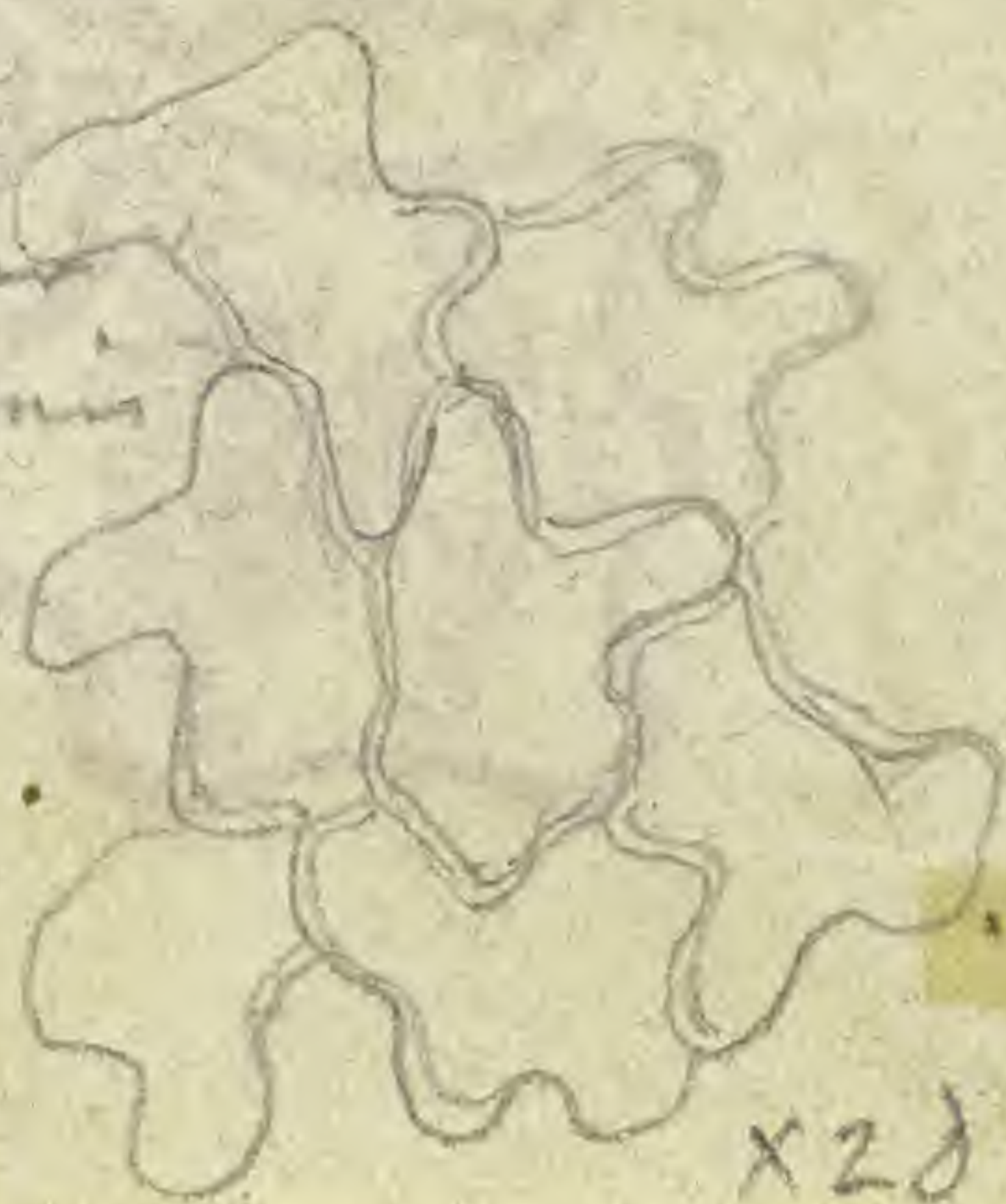
epidermis  
of fruit  
x 280

stomata  
0.14 - 0.16 mm long

upper lower  
epidermis



x 280



x 20



parenchyma  
of root with  
spiral vessel

x 280

x 60  
root & sheath



0 1 2 3 4 5 6 7 8 9 10

cm

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0 1 2 3 4 5 6 7 8 9 10

cm

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*Lemna polytricha*, Leggett, New York Aug. 1870

Aug 21. 1870

all x60

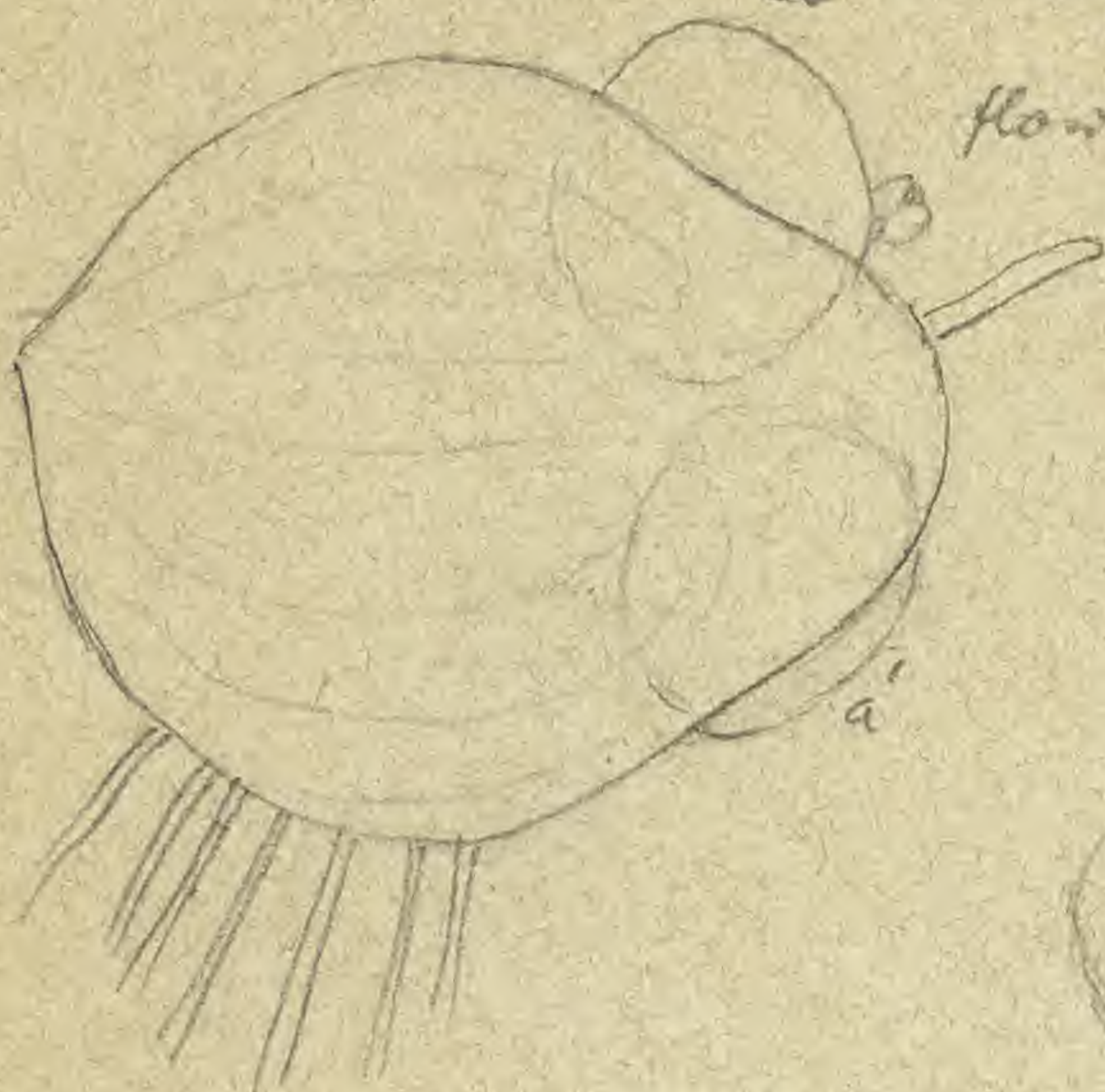
anterior stamens

x10

a winter ponds

flowers under it & behind it

stem



p

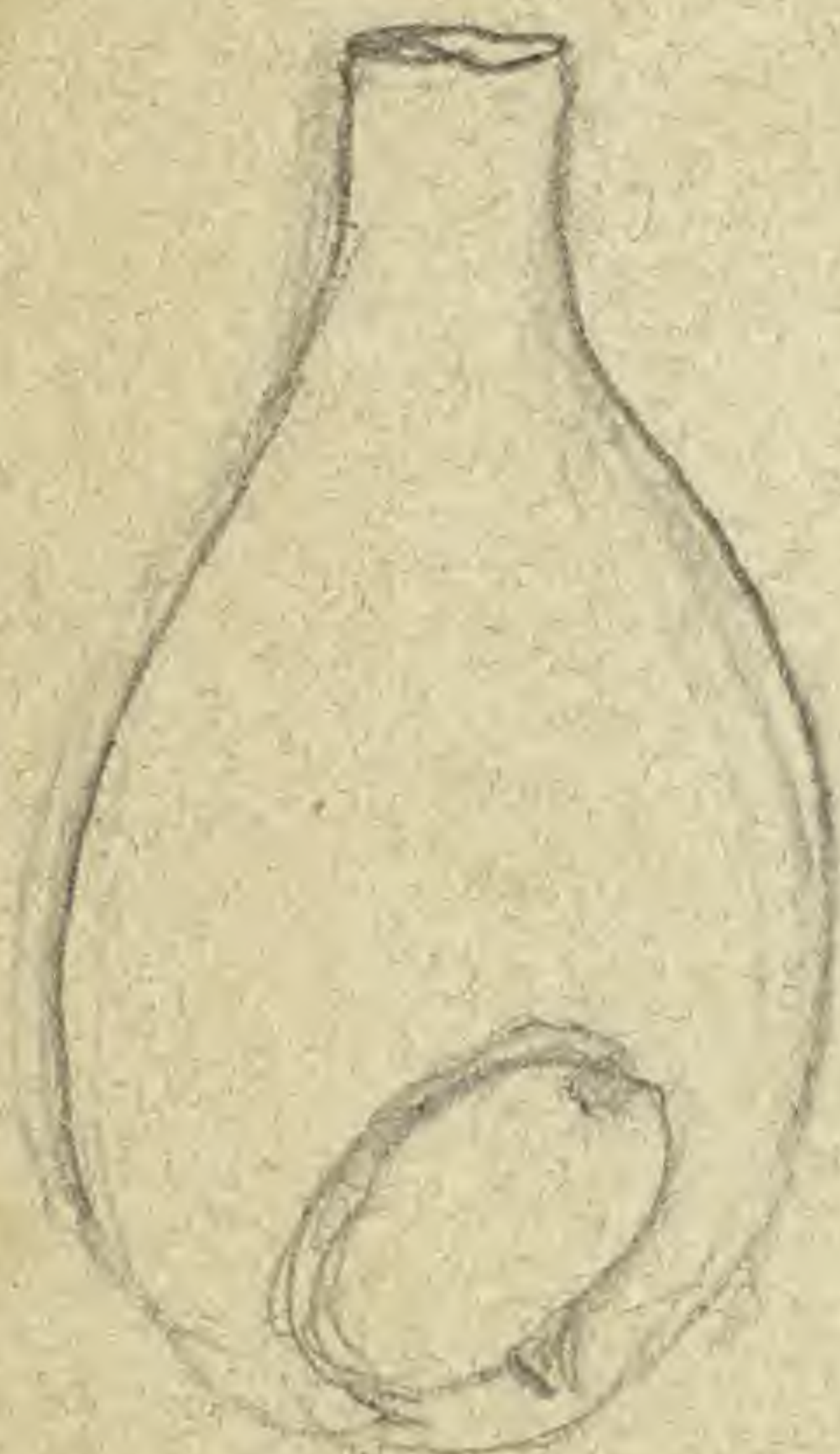


stamens under pistil

young fruit

p

a



usual case

seen once

drawn from memory

a anterior

p. posterior



0 1 2 3 4 5 6 7 8 9 10

cm

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0 1 2 3 4 5 6 7 8 9 10

cm

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*L. polyotipis*  
Laggett, N York, Aug '70

Nov 5-

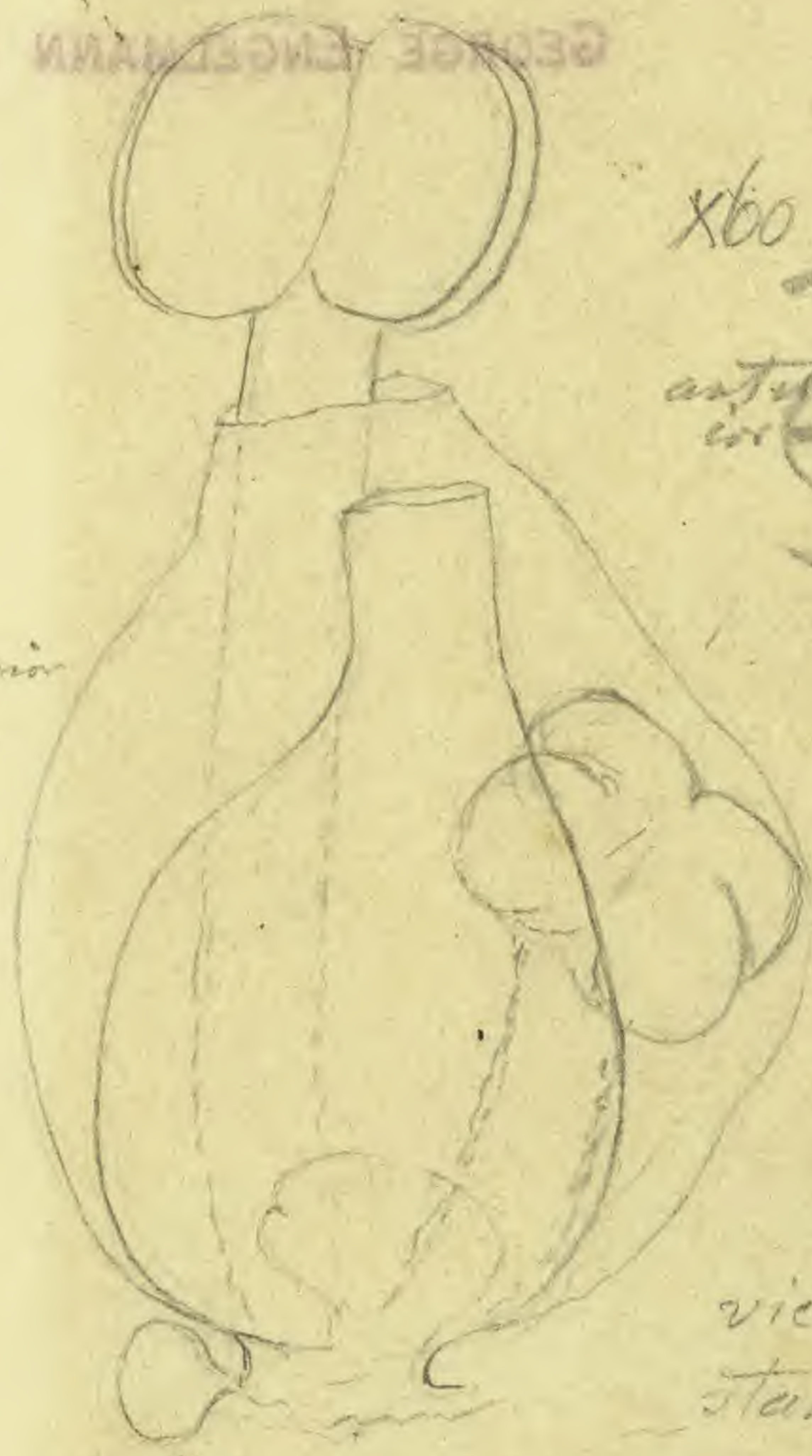
1870

x 10



only 3-5 roots seen  
apparently sometimes two  
perforating the leaf

anterior



moles

x 60

anterior



upper side

posterior

lower side

posterior

views from above  
stamens below the  
pistil



0 1 2 3 4 5 6 7 8 9 10

cm

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7799

10 x

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0 1 2 3 4 5 6 7 8 9 10

cm

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*Lemna polyrrhiza*

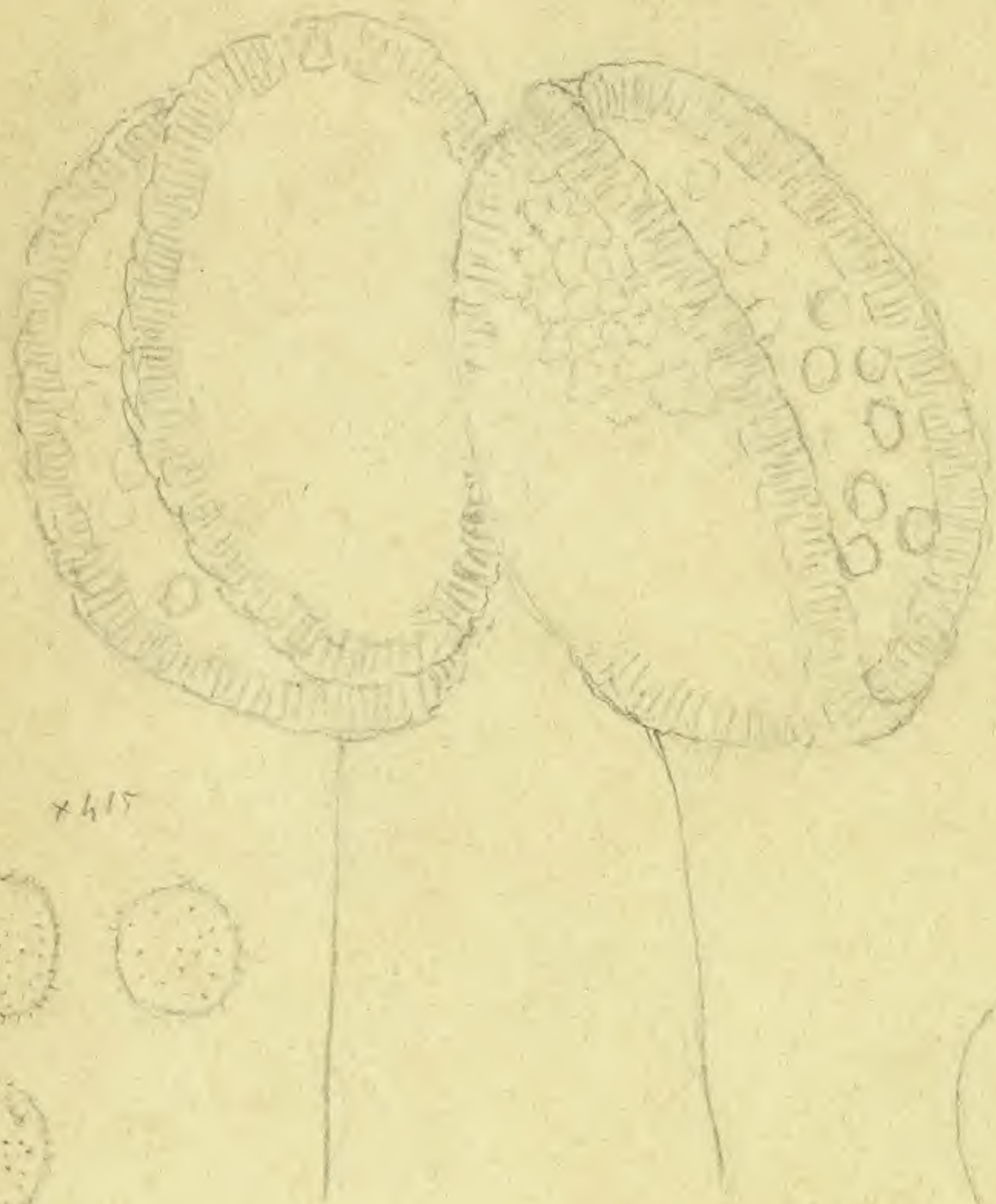
Nov. 6 1870

W York

x 150

anther cells longitudinally dehiscent

x 60



upper

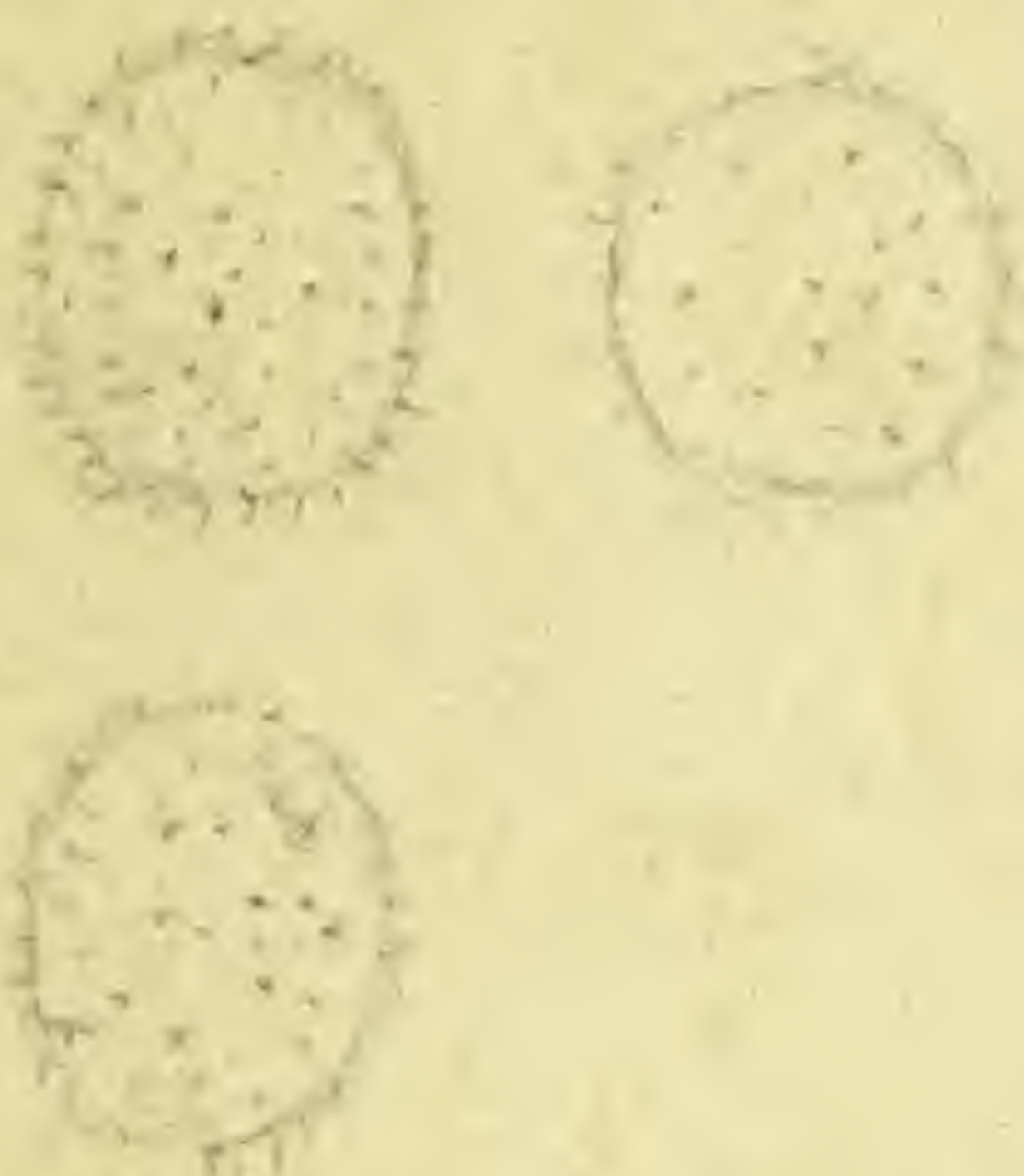
x 60

lower side



lower side of anther

x 415



Pollen oval or globose

globose 0.019 ~ 2

oval 0.018 x 0.020

x 0.019 x 0.022



ovule

x 150



0 1 2 3 4 5 6 7 8 9 10

cm

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1285  
x 150



4 fl. with single  
ovules

x 150



ribs of pond 5-6-7

*Leuca polyrrhiza*

New York, Lyggett

Nov 8<sup>th</sup> 1870

x 10



upper edge turned open  
so as to see lower valves  
of pocket & flowers

*Stipes sanctimariae*



0 1 2 3 4 5 6 7 8 9 10

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0 1 2 3 4 5 6 7 8 9 10

cm

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*L. polyarhiza* 11 9 1870

Chalaza Nov 9. 10 1870

x 60



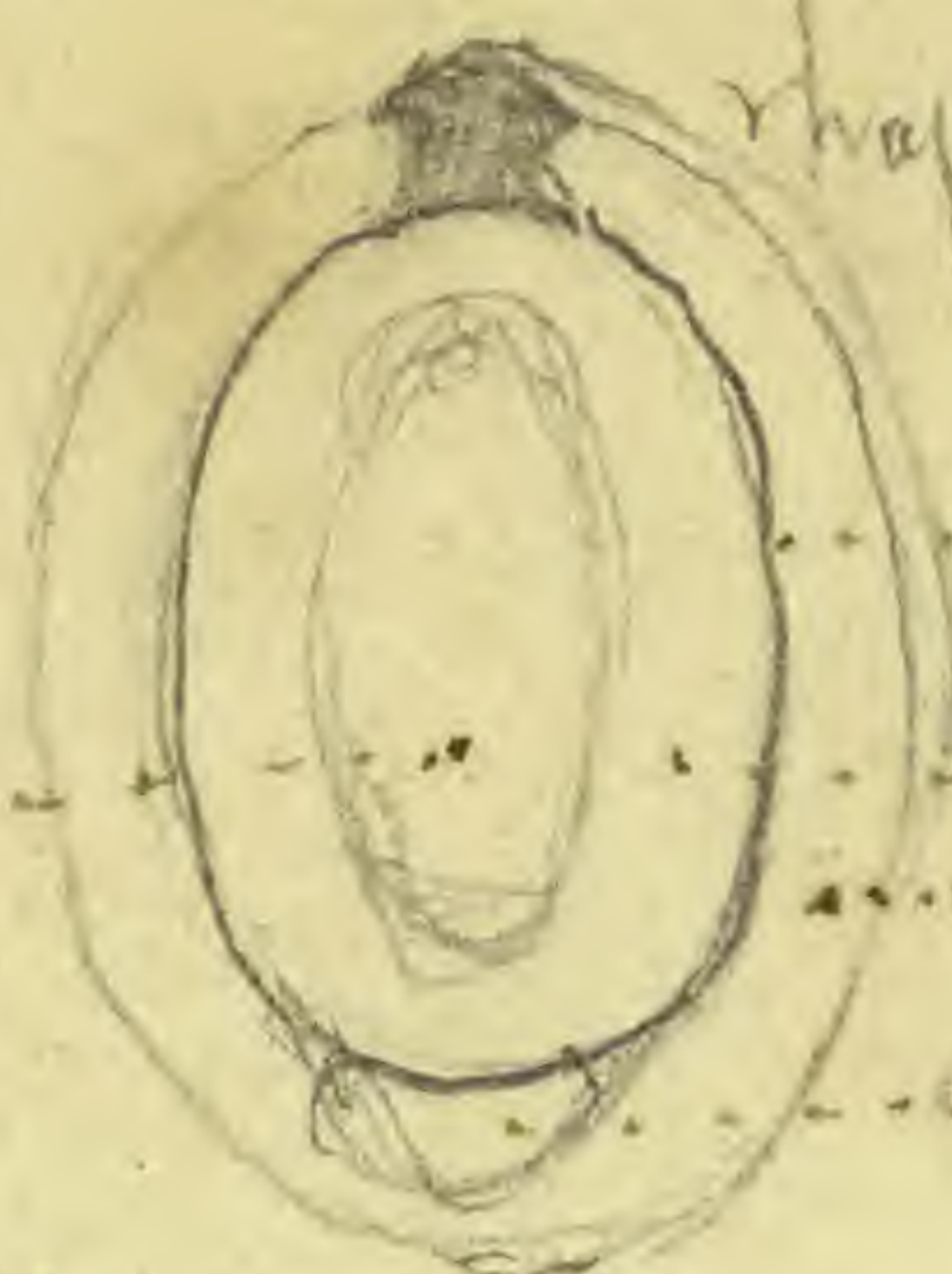
young, unopened anthers, 2-lobed  
both cells very deeply separated

surface of seed  
somewhat reticulated with  
convex cells, when moist



x 150

Embryo



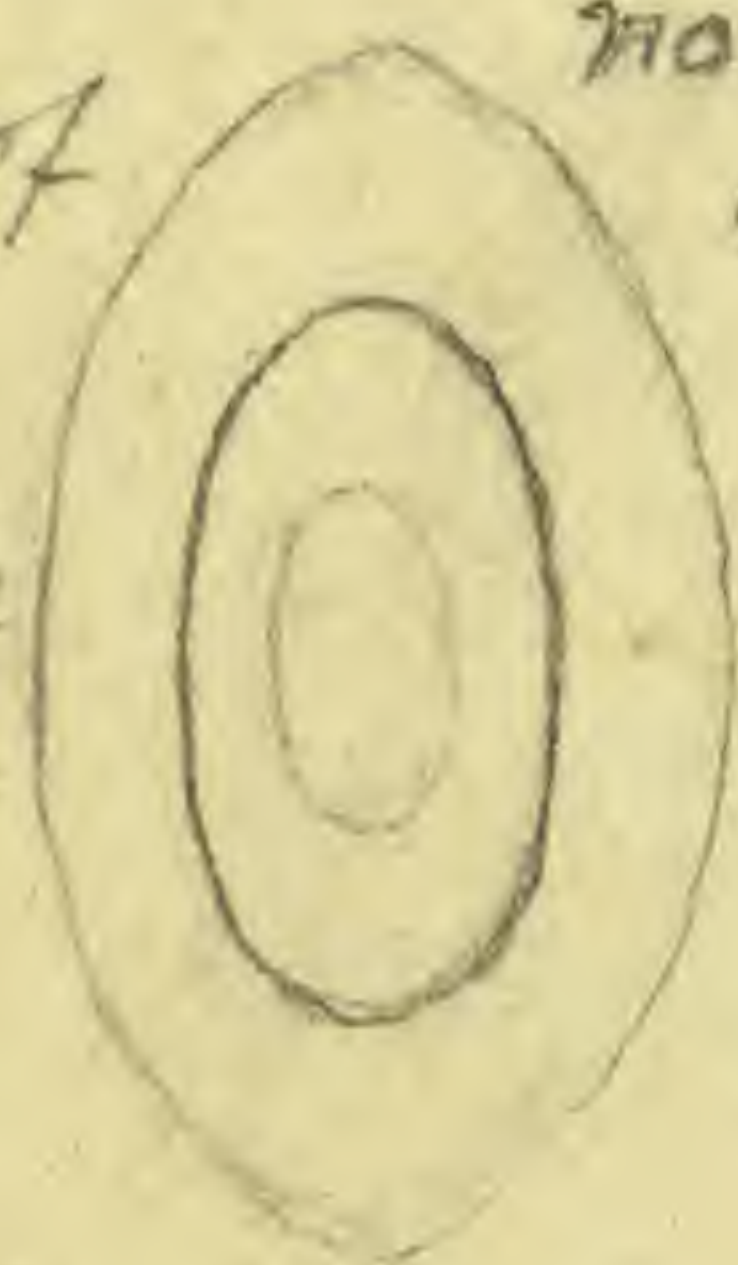
Chalaza

x 30

endosperm  
section  
endosperm or albumen  
testa thick  
operculum

letter Nov 13

section of  
seed  
through  
middle



no iodine  
reaction  
only middle part  
coloured darker  
and especially  
its brown membrane



action  
of iodine



x 30



Utricle with seed, in alcohol  
p. posterior  
a. anterior side



under side  
of dry seed  
showing the chalaza  
(hilum) & raphe

Dark spot on seed is the chalaza  
always posterior



0 1 2 3 4 5 6 7 8 9 10

cm

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7802

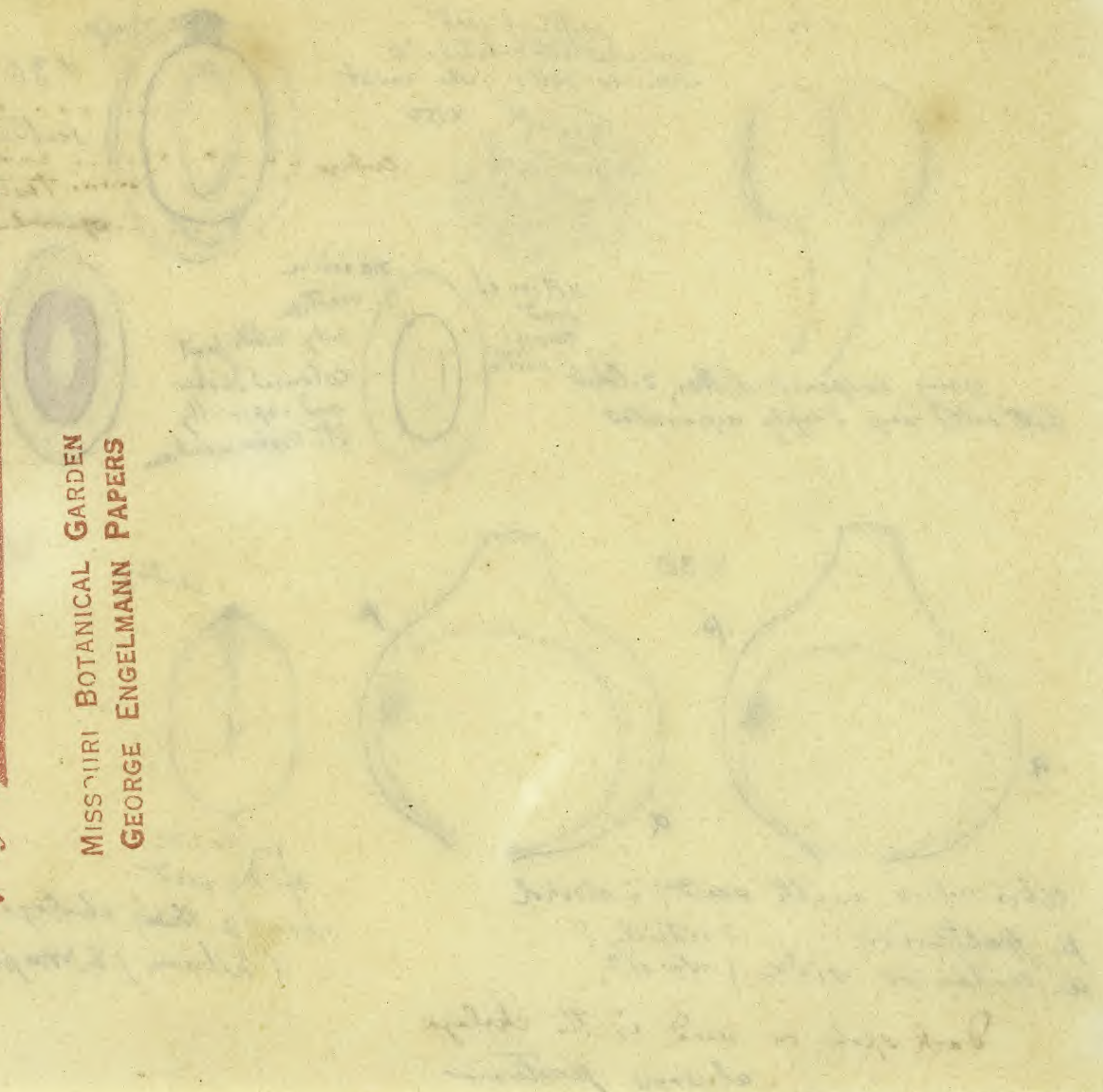
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cm

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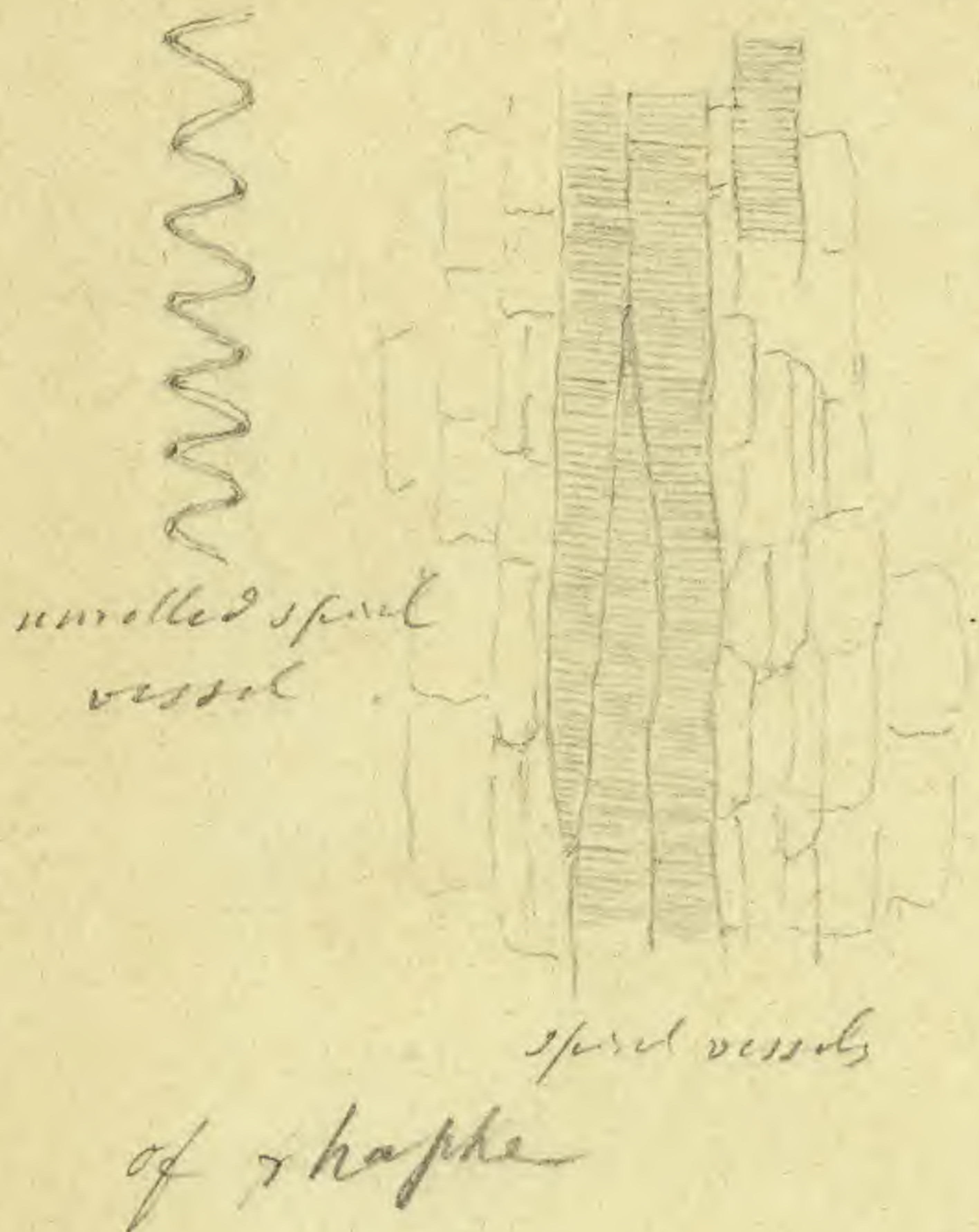


x280

*Sporobolus polytrichus*

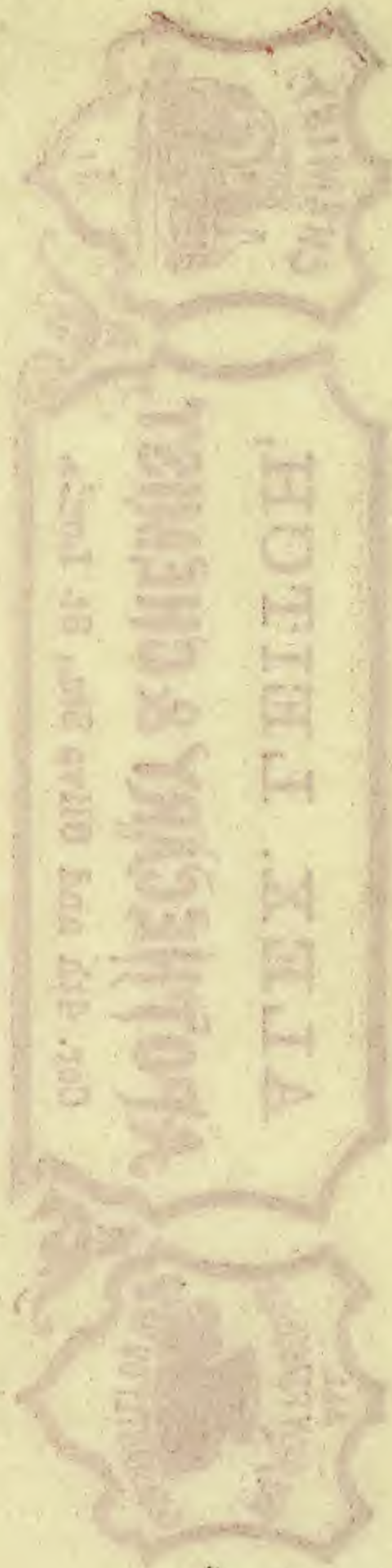
Nov 11 1870

New York



Is this really from the *Sporobolus*?  
I could not find it again! Nov 13

ГЕОРГЕ ЕМСЕЛМАННЪ БЪЛГЕВЪ  
УЧЕНИКЪ НА БОТАНИКАТЪ В ПЕТЕРБУРГЪ



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*[Faint, illegible handwritten text, likely bleed-through from the reverse side of the page.]*



0 1 2 3 4 5 6 7 8 9 10

cm

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Nov 13 70

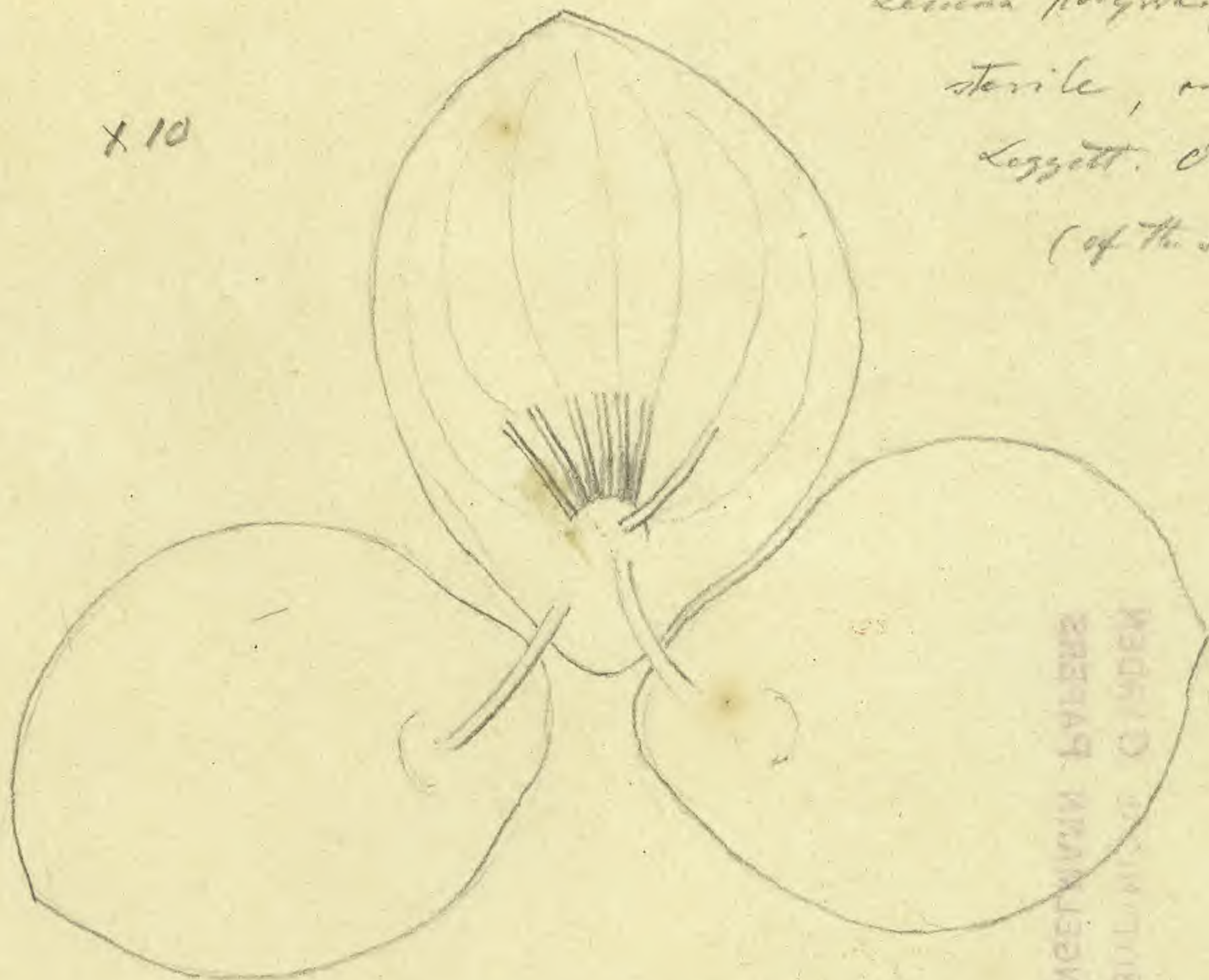
*Lemna polyrrhiza*, New York

sterile, cultivated in Room

Loggott. Oct 1870

(of the same lot, that  
flowered in August

x 10



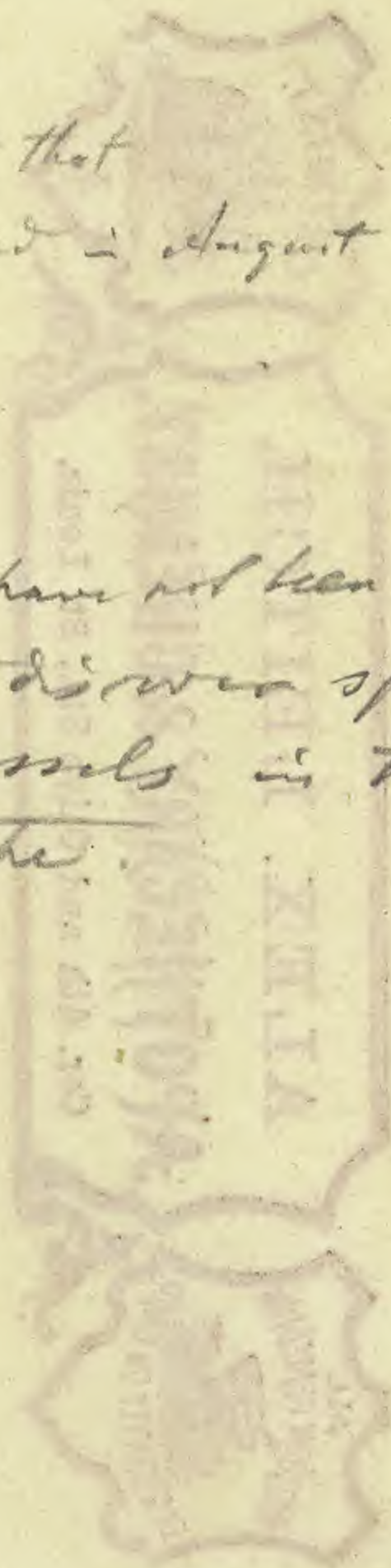
I have not been able  
to discover spiral  
vessels in the  
stipe.



Staphylococcus crystal masses  
both in the cells  
of the subcuticular  
tissue

(n)

GEORGE ENGELMANN PAPERS  
IN THE BOTANICAL GARDEN



0 1 2 3 4 5 6 7 8 9 10

cm

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0 1 2 3 4 5 6 7 8 9 10

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*Lecanum polytricha*

13 Nov 1870

x 30

N York  
seed, nearly ripe



cavity in which  
operculum is  
hidden

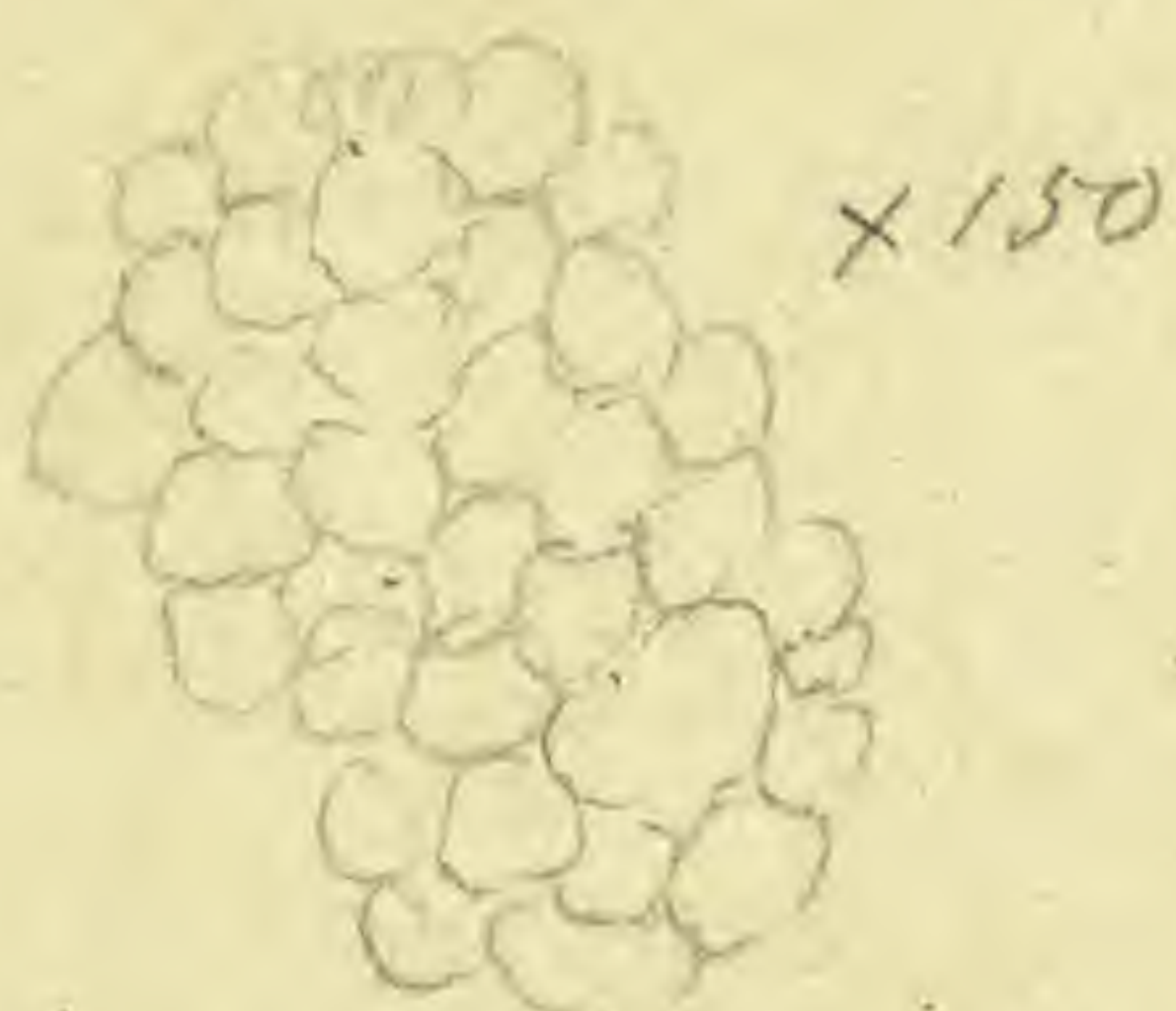
good opportunity of  
examining raphes  
but no spiral vessels  
discovered

testa very thick and  
spongy

endopleura a brown  
membrane

endosperm or albumen  
rather large, thick,

embryo - no divisions  
(plumula etc) seen  
not quite ripe?



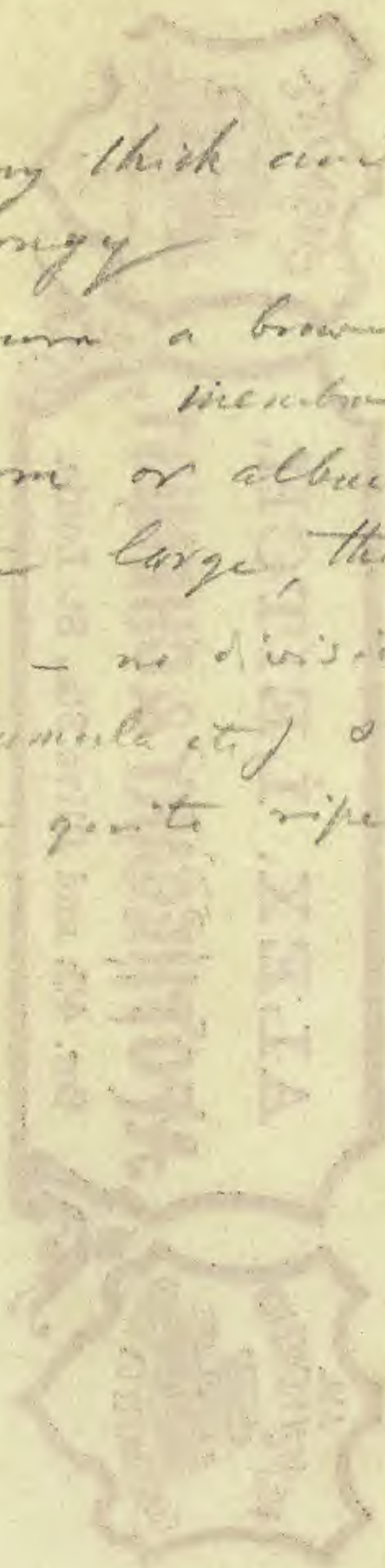
x 150

spongy  
tissue cells of testa



x 150  
cells  
of endosperm

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cm

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	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.	
1861	32.2	40.4	44.8	58.1	64.1	76.9	77.5	78.6	69.1	57.9	46.0	39.7	57.1°F.
1862	23.9	30.2	43.2	55.0	69.7	75.1	81.2	80.7	72.1	57.3	42.6	41.3	56.4°F.

RELATIVE HUMIDITY.

	Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861	72.2	63.3	64.5	61.5	66.3	70.8	66.3	69.6	77.3	76.6	69.0	74.3	69.5
1862	85.3	73.9	70.8	67.0	57.3	67.0	66.8	64.3	74.2	67.2	69.5	74.6	69.8

III. Yearly mean of Positive Electricity of Temperature, and of Relative Humidity of the Atmosphere, at the hours of 6, 9, 12, 3, 6 and 9, from morning till night, based upon daily observations at these hours through the years 1861 and 1862, at St. Louis, Mo.

ELECTRICITY.

	At 6 A.M.	At 9 A.M.	At 12 M.	At 3 P.M.	At 6 P.M.	At 9 P.M.
1861	8.6	10.0	9.2	7.9	8.7	6.9
1862	8.9	10.0	9.1	7.3	8.1	6.8

TEMPERATURE.

1861	48.9° F.	54.9	61.6	63.6	59.3	54.3
1862	48.9	55.0	60.9	62.3	58.0	53.6

RELATIVE HUMIDITY.

1861	86.4	71.3	60.3	57.2	65.1	77.3
1862	5.3	70.6	60.0	57.5	67.6	78.0

*L. polyorkiza* 18-19  
 Collected by Henry Gillmann



0 1 2 3 4 5 6 7 8 9 10

cm



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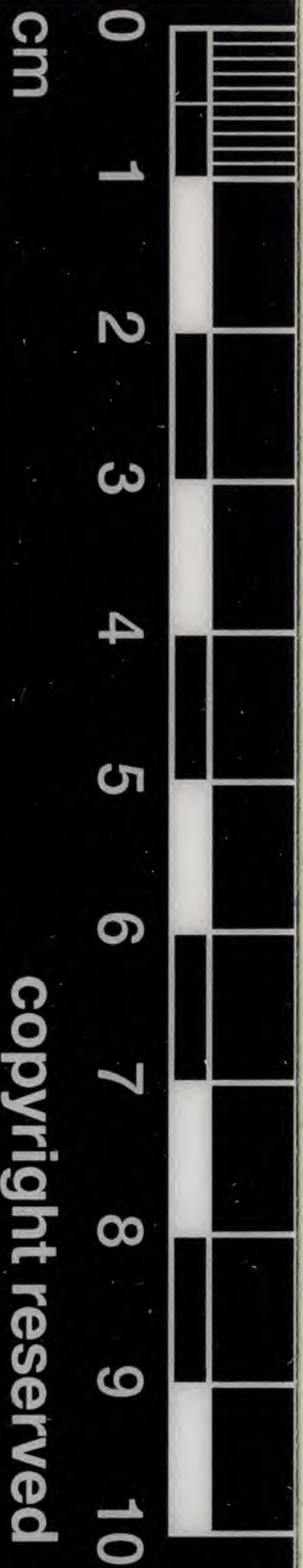


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V. Positive or Negative Electricity in the Observations of '61 & '62.

	Positive Electricity.		Negative Electricity.		No Electricity, or 0.		Highest Positive Electricity.	
	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.
Jan.....	179	179	3	5		2	40°	40°
Feb.....	162	166	6	2			34	33
March...	168	179	15	8			30	48
April....	157	157	12	22	1	1	33	52
May.....	171	180	17	5	1	3	25	32
June....	162	143	5	2	8	20	16	21
July.....	183	153	3	8	1	24	14	11
August..	176	143	5	4	6	40	15	19
Sept.....	169	117	1	1	10	61	18	23
Oct.....	162	143	4	3	20	41	33	35
Nov.....	172	157	2	7	6	16	42	42
Dec.....	175	166	5	0	6	17	37	35
	2046	1883	78	67	59	225	42°	52°



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Feb. 40.4 30.2  
 Feb. 63.3 73.9  
 y m Hu frons t  
 : 6 A. 8.6 8.9  
 48.9 48.9 86.4 5.3

*L. Polyzshige* *Justiz*  
*G. Steiger in New York.* *Dittrich*

**Fr. J. Schild.** Aus dem Leberberg. Gedichte u. Sagen in Solothurner Mundart. 2 Bdn. 1. Bdn. 0.50; 2. Bdn. 0.70

— Der Großätti aus dem Leberberg. Sammlung von Volks- u. Kinderliedern, Spottreimen, Sprichwörtern, Wetter- u. Gesundheitsregeln aus dem Solothurner Leberberg. 0.65

— Juraklänge in Solothurner Mundart. Vermischt mit einzeln. hochdeutsch. Gedichten. 0.45

**A. Schirmer.** Düt un dat. Nimels. Cart. 1.20

**A. Schleicher.** Volksthümliches aus Sonneberg im meiningen Oberlande. 1.99

**Schlesische Volkslieder m. Melodien.** Aus dem Munde des Volkes gesammelt u. hrsg. v. Hoffmann v. Fallersleben u. E. Richter. 4 Liefgn. 2.60

**J. A. Schmeller.** Die Mundarten Bayerns. grammatisch dargestellt. Beigegeben ist eine Sammlung von Mundart-Proben, d. i. kleinen Erzählungen, Gesprächen etc. in den verschiedenen Dialecten des Königreichs. 2.00

— Bayerisches Wörterbuch. Bearbeitet v. G. K. Frommann. 4. 1.—4. Liefer. @ 1.05

**J. Sp. Schmid.** Schwäbisches Wörterbuch m. etymolog. histor. Anmerkungen. 1.45

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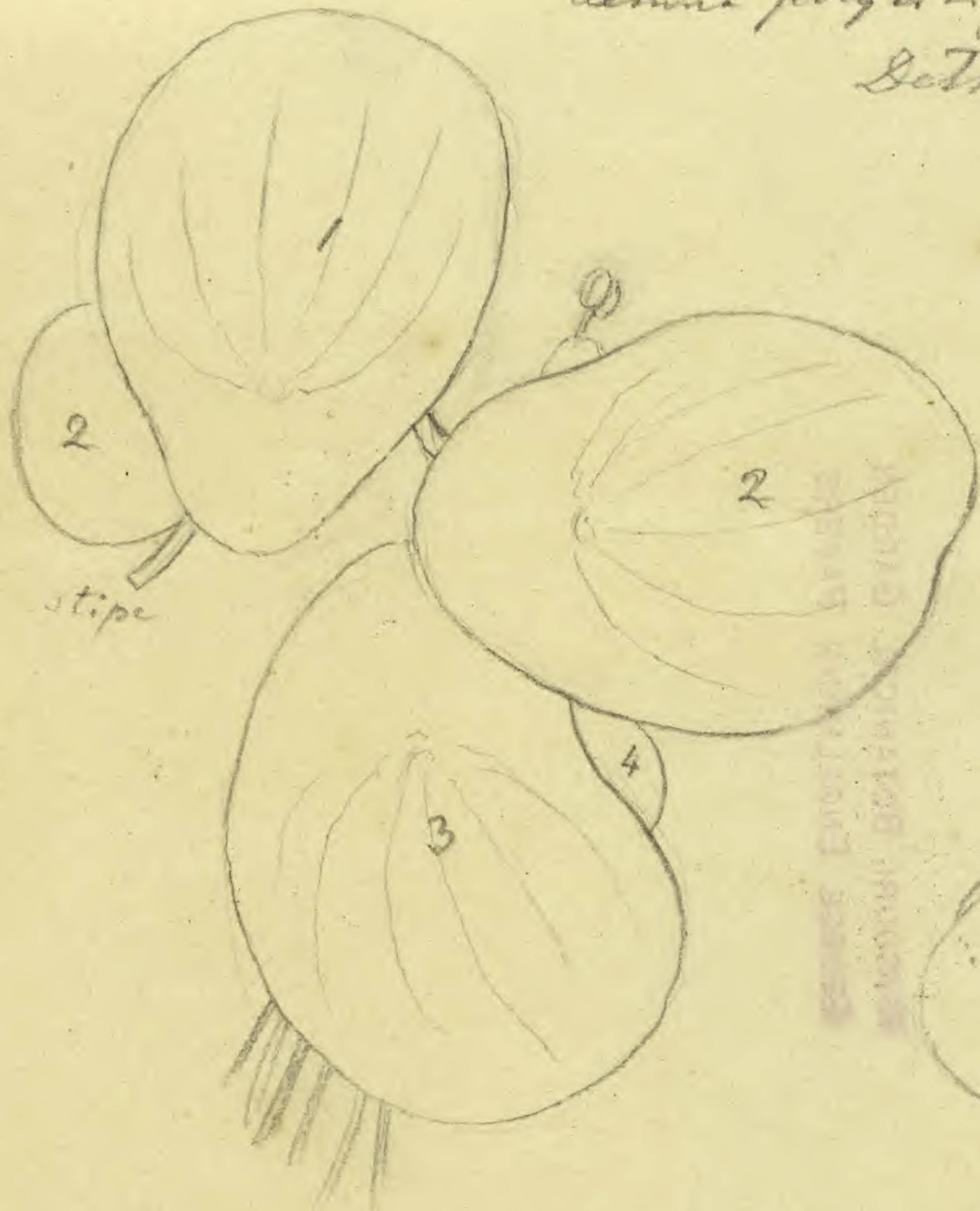
*Senecio polyactis*

Aug 9 1871

Gettysburg

Henry Gillman

X10



flower bud

figure X60

same day with 2 ovaries



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*Lemna polytricha*

Aug 9 1871

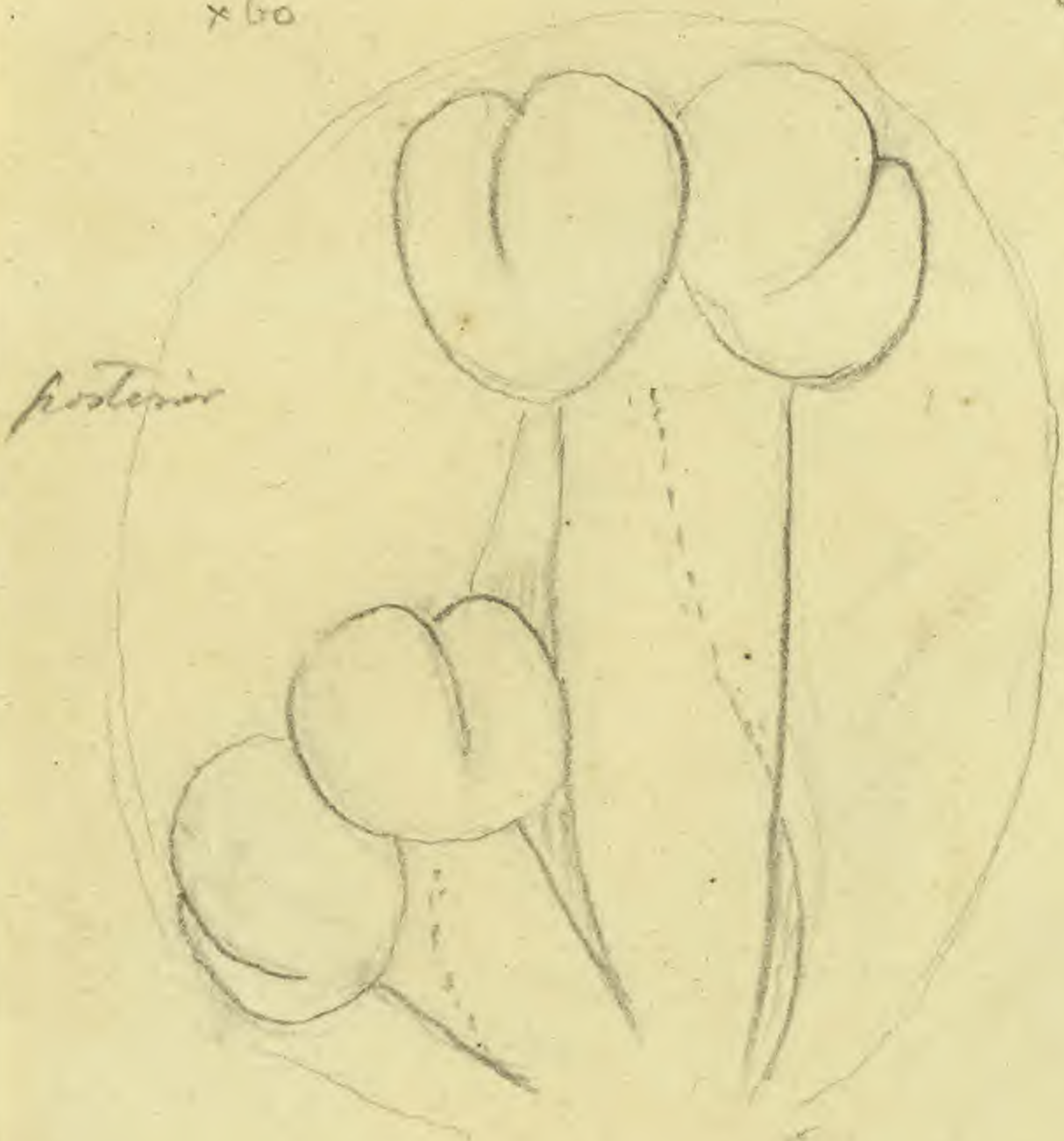
Detroit

1871

x60

bud

posterior



anterior

x60



from below



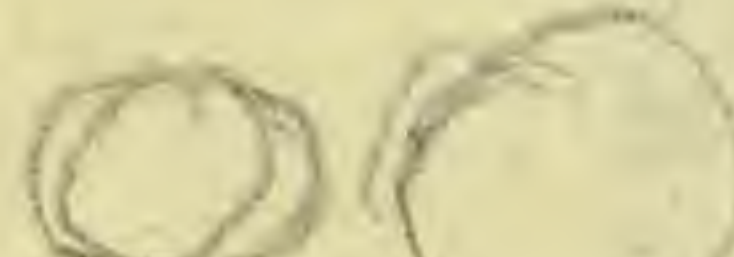
spiculate Pollen

x415

posterior

pistil

anterior



stamens

lower side of frond



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**Druggist & Chemist.**  
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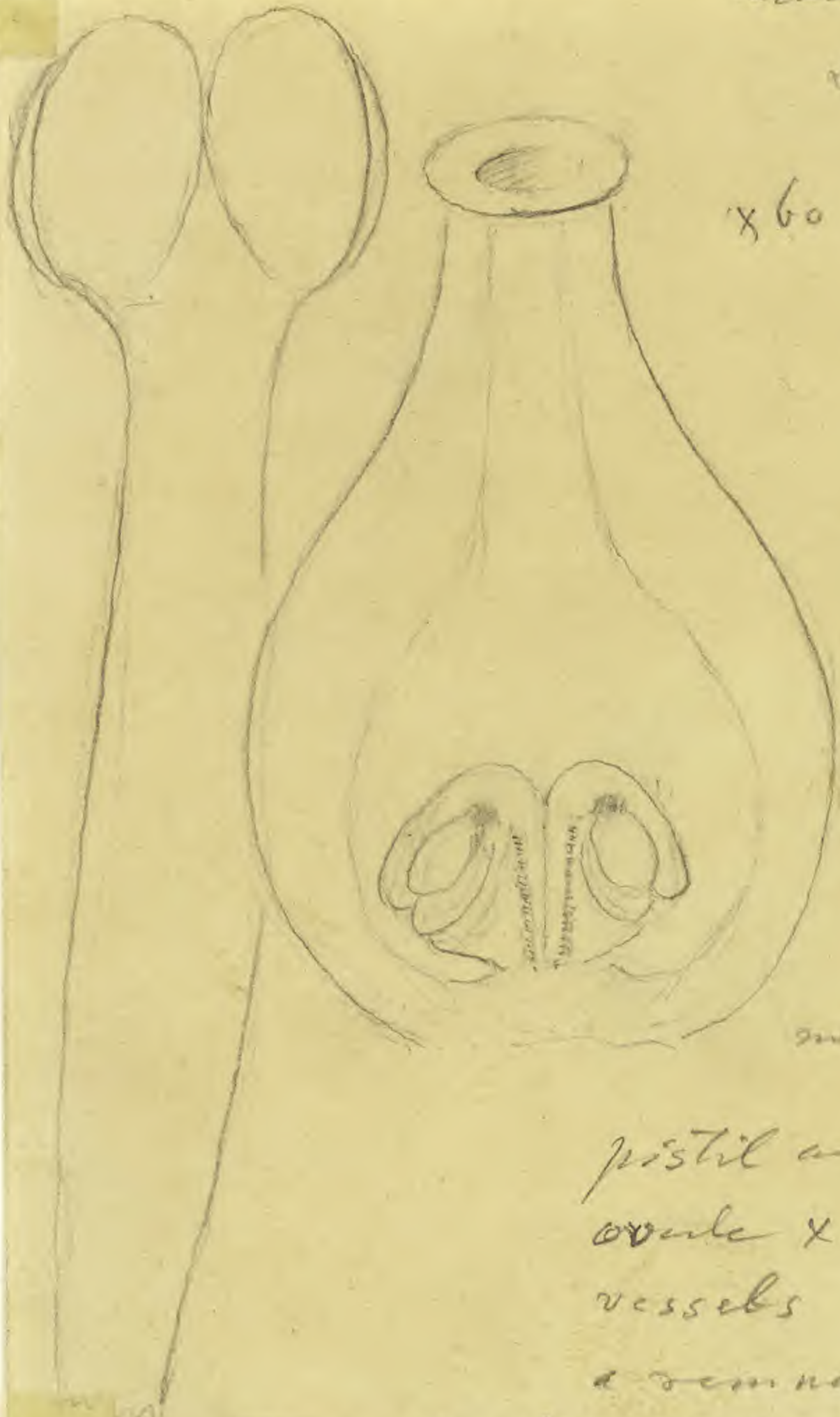
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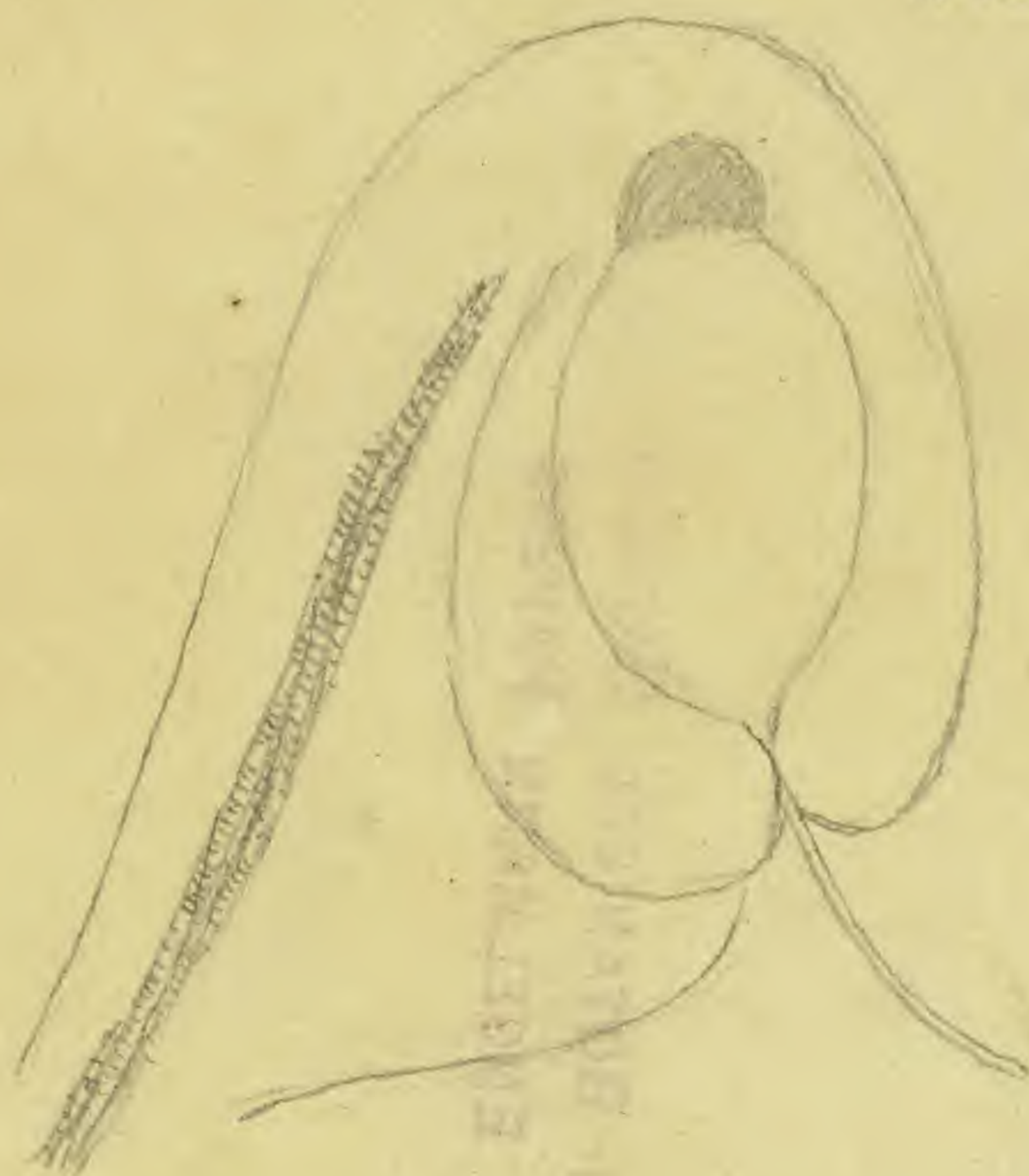
*Limnaea polyrrhiza*

Aug 27 1871

Detroit, H. Gillman



x 60



x 150

one ovule probably smaller  
and so well developed than the other - sterile?

pistil and anther after fertilization  
ovule x 150 showing the very strong  
vessels and also what seems to be  
a remnant of the pollentube

mature, effete, stamens only  $\frac{100}{60} = 1.7$  mm long

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 VOL. 11, P. 103  
 1871



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**Leitch & Corlies**

**DRUGGISTS**

South West

Corner Fifth

and Market

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*Lesqueris polycarpa*  
Detroit

Aug 27 1871

x150



ovule of the bud examined and  
figured on Aug 9  
made transparent  
by Polak



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**h & Corlies**

**ROCKS**

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and Market  
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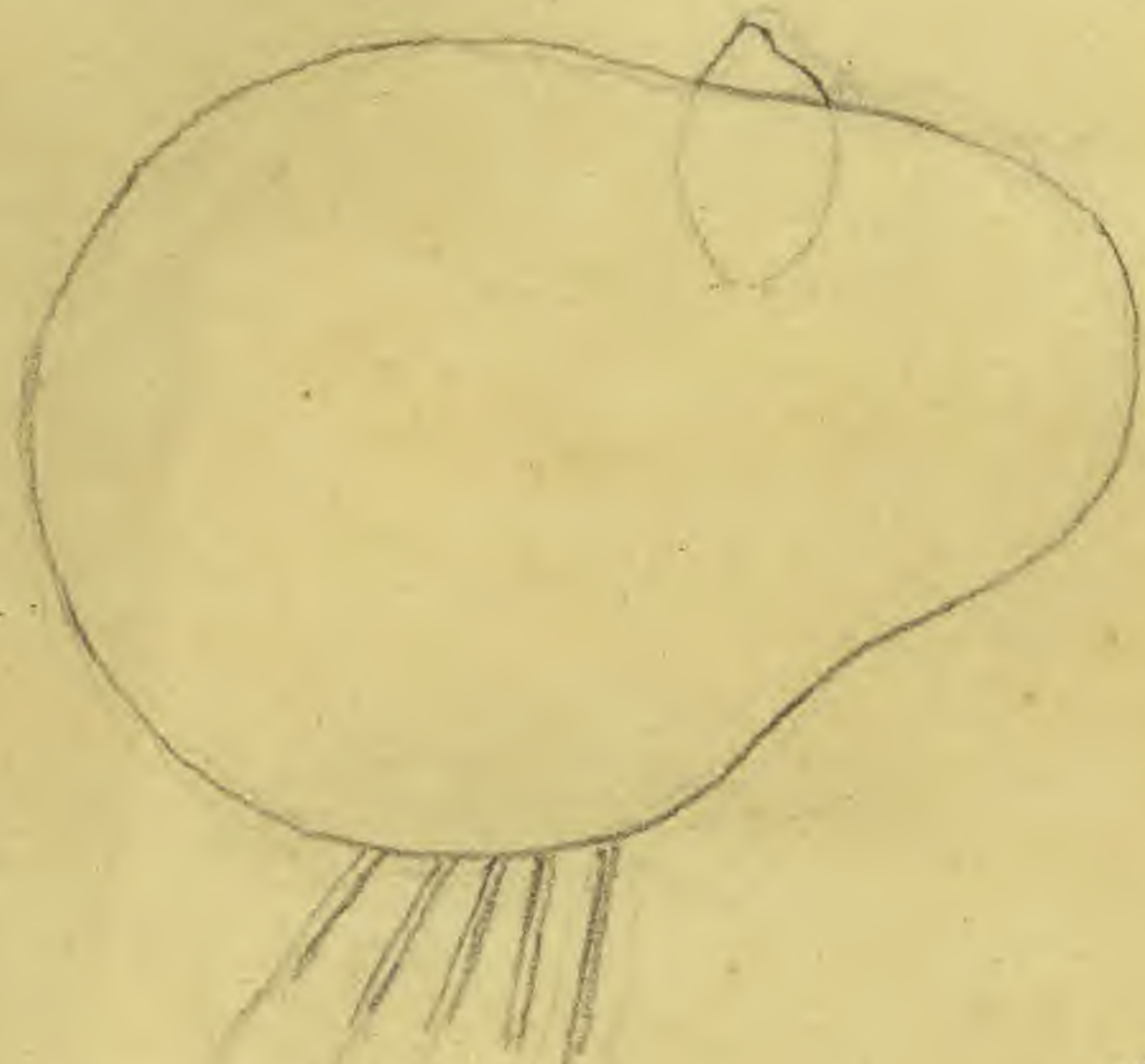


*L. polyanthum*

Aug 28 1871

Dr. Coit

x10



x30



fruit immature, ovules apparently abortive!

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**WAGGONERS**

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FLORA OF MISSOURI.

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HERBARIUM OF MISSOURI

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F. W. DEWART.



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Oct 21 1867

*Lemna polyrrhiza*  
antennal buds  
Hall's specimen

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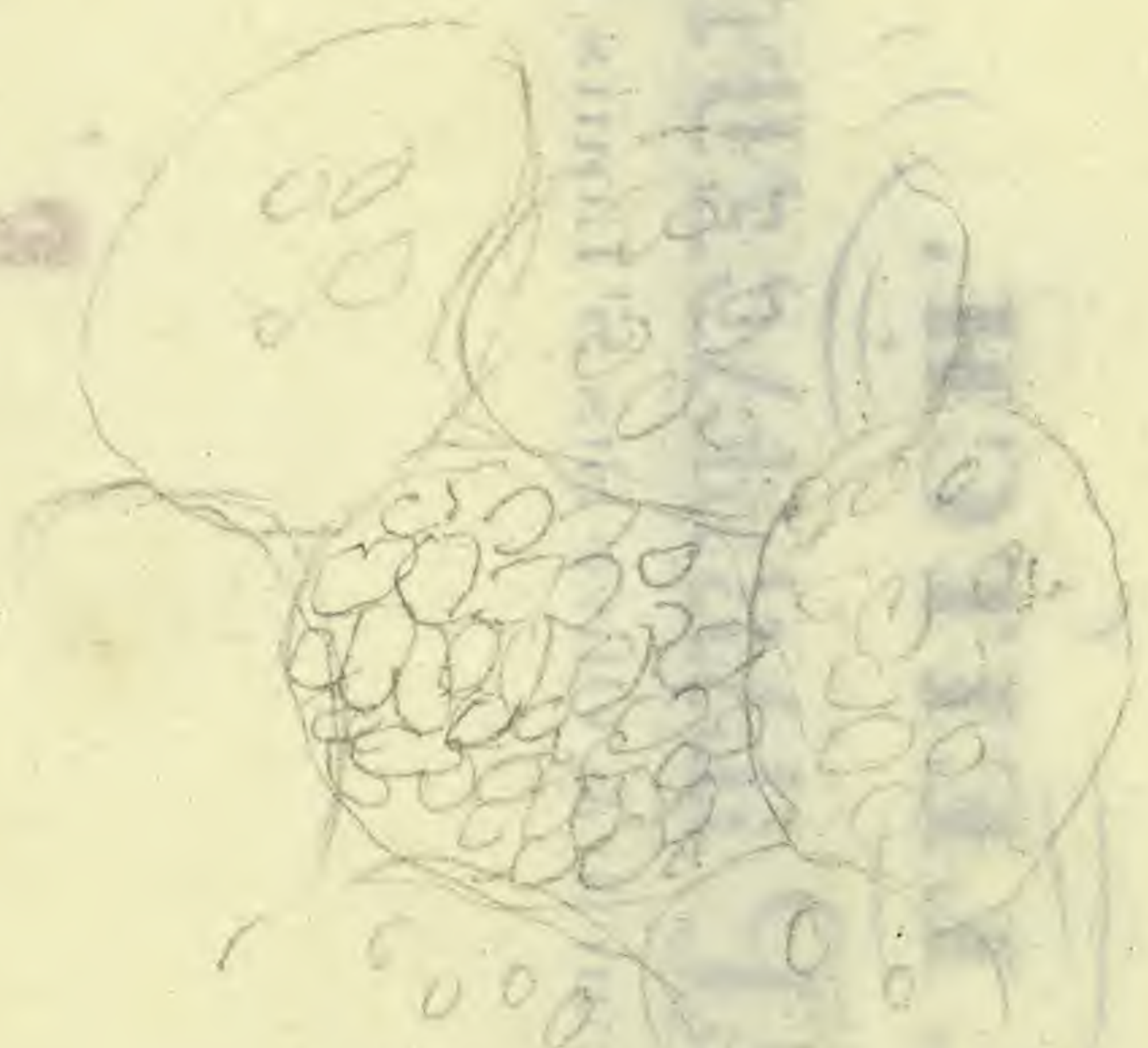
x 10



convex  
lower side

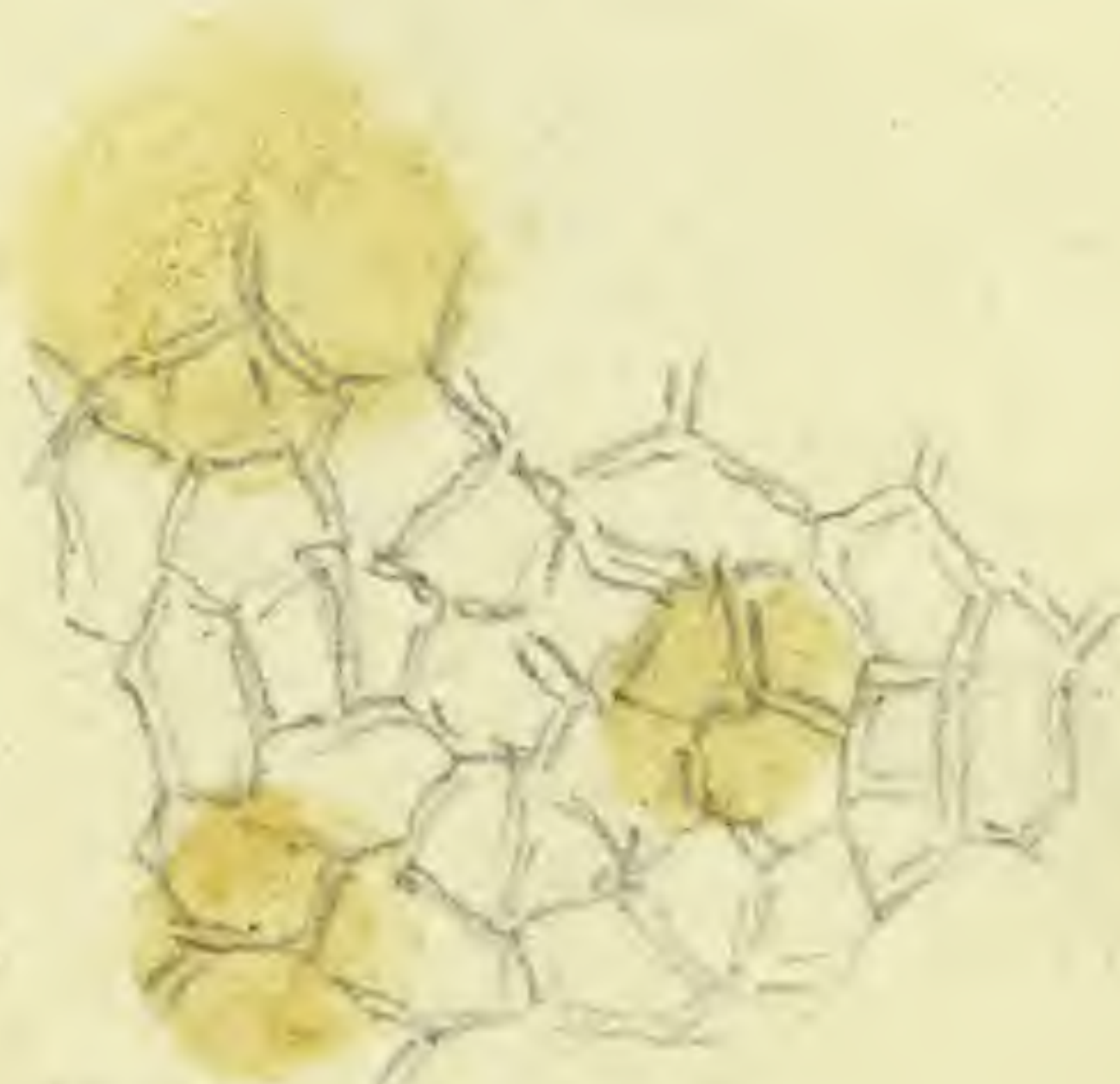
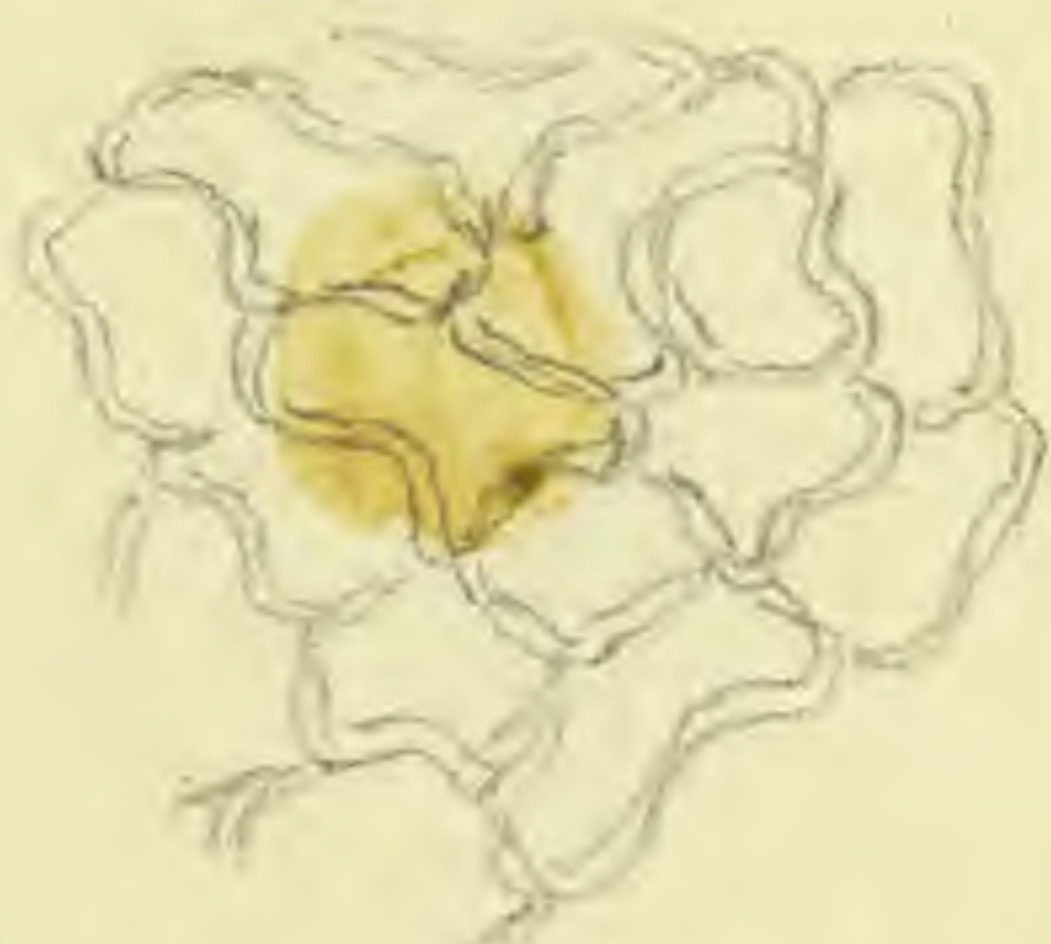


plane  
upper side



paramycesium cell,  
full of starch

x 280



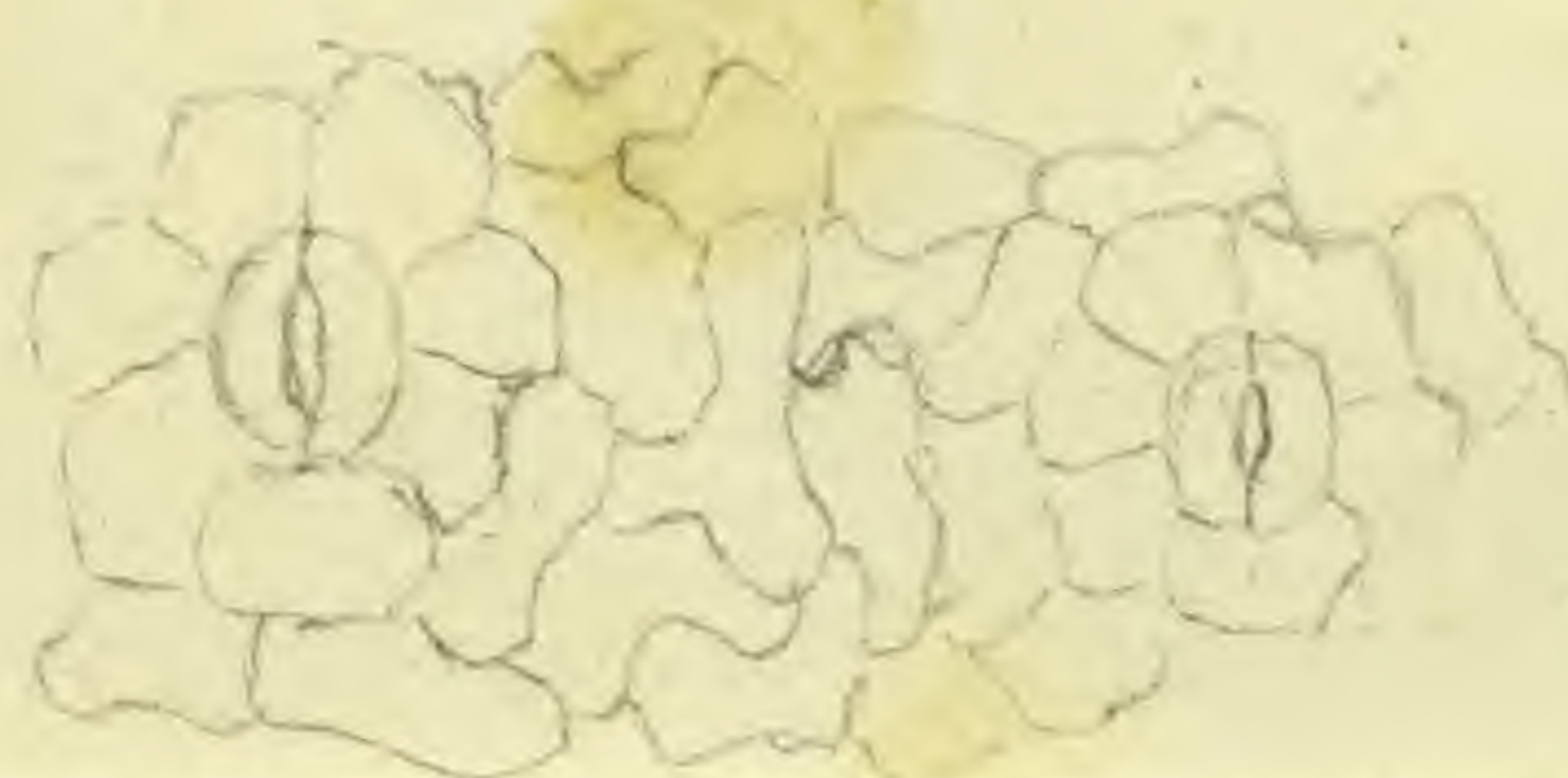
epidermis on different  
parts of surface

brown cells under epidermis



starch granules

x 280



stomata small, surrounding cells  
angular, others often somewhat  
sinuous

x 785



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**ALEX. LEITCH,**  
**APOTHECARY & PHARMACEUTIST,**

Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

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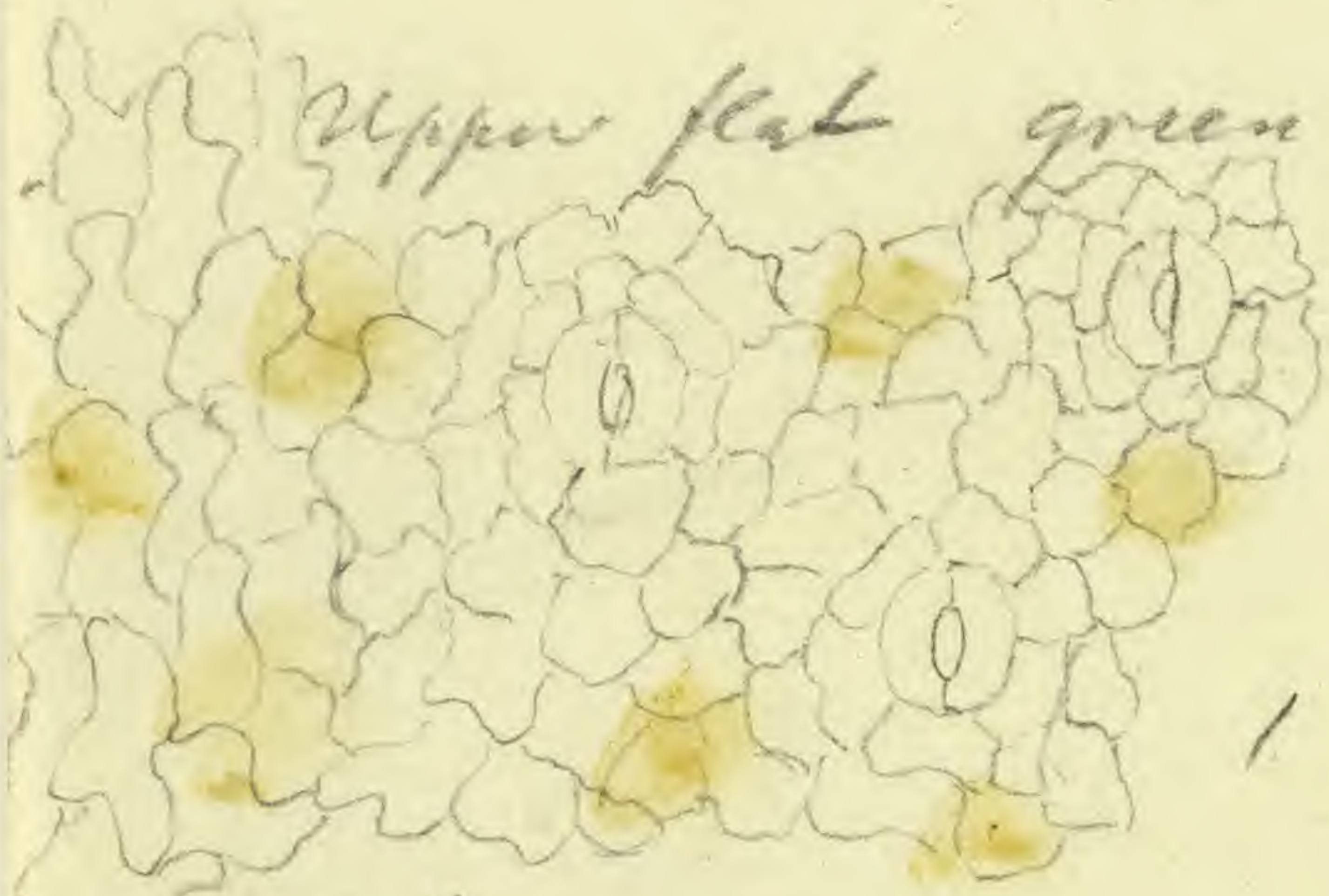
*Lemna polyrrhiza*

Nov 10 1867

(living) autumnal bud.

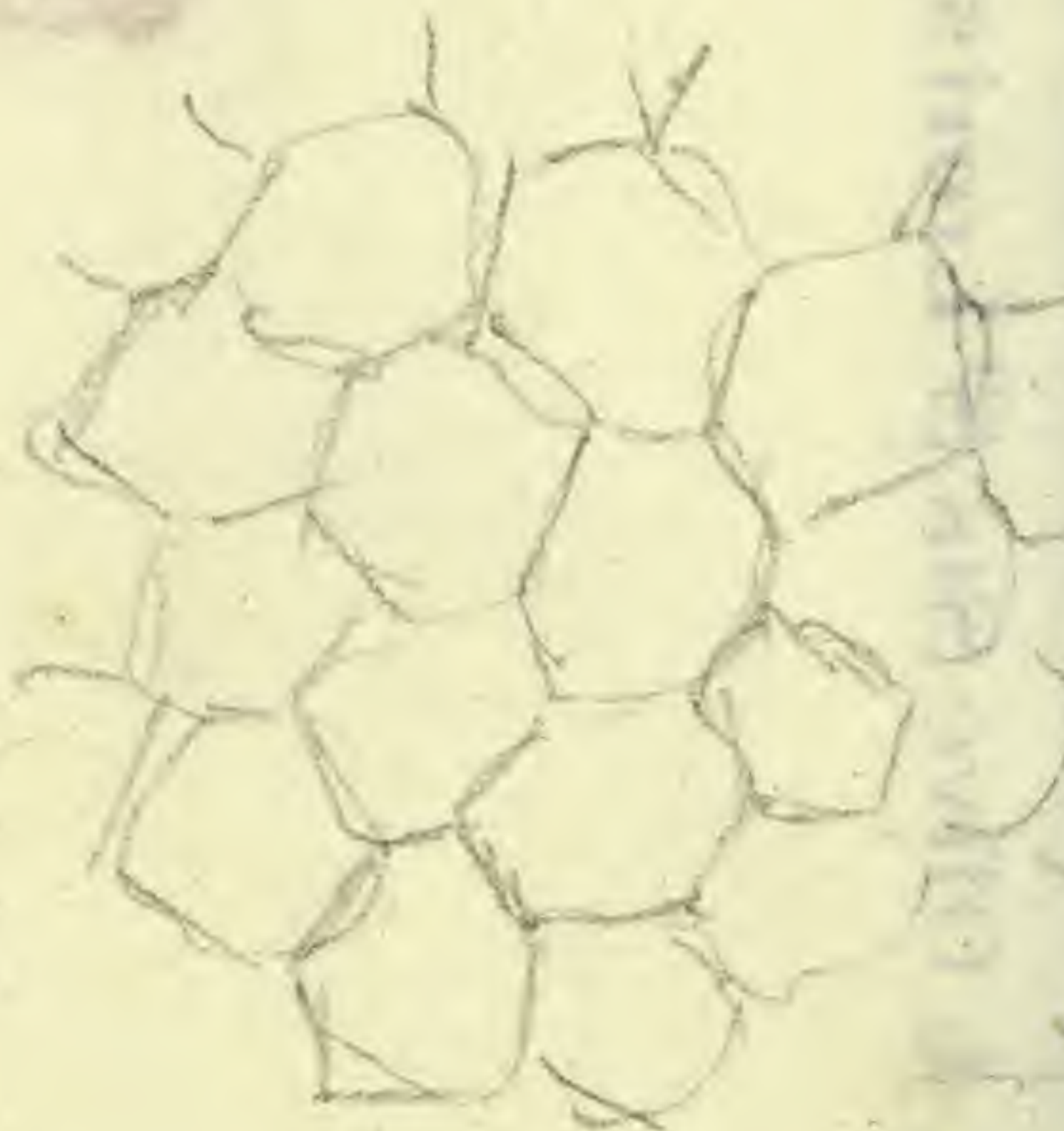
C. F. Austin's Nov 1867

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Upper flat green surface

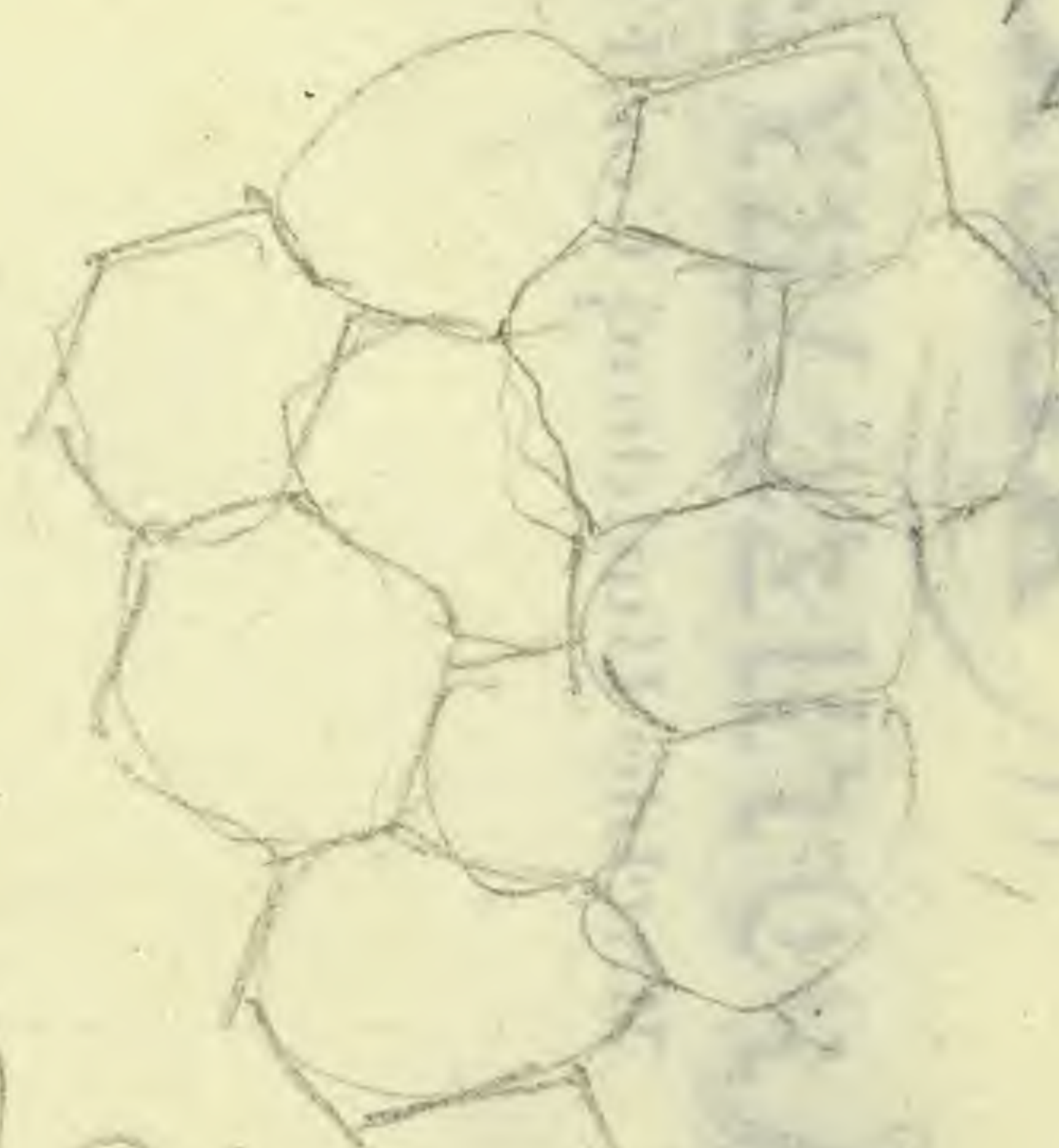
part with numerous  
stomata and small  
more angular cells



paracytic  
under upper  
epidermis

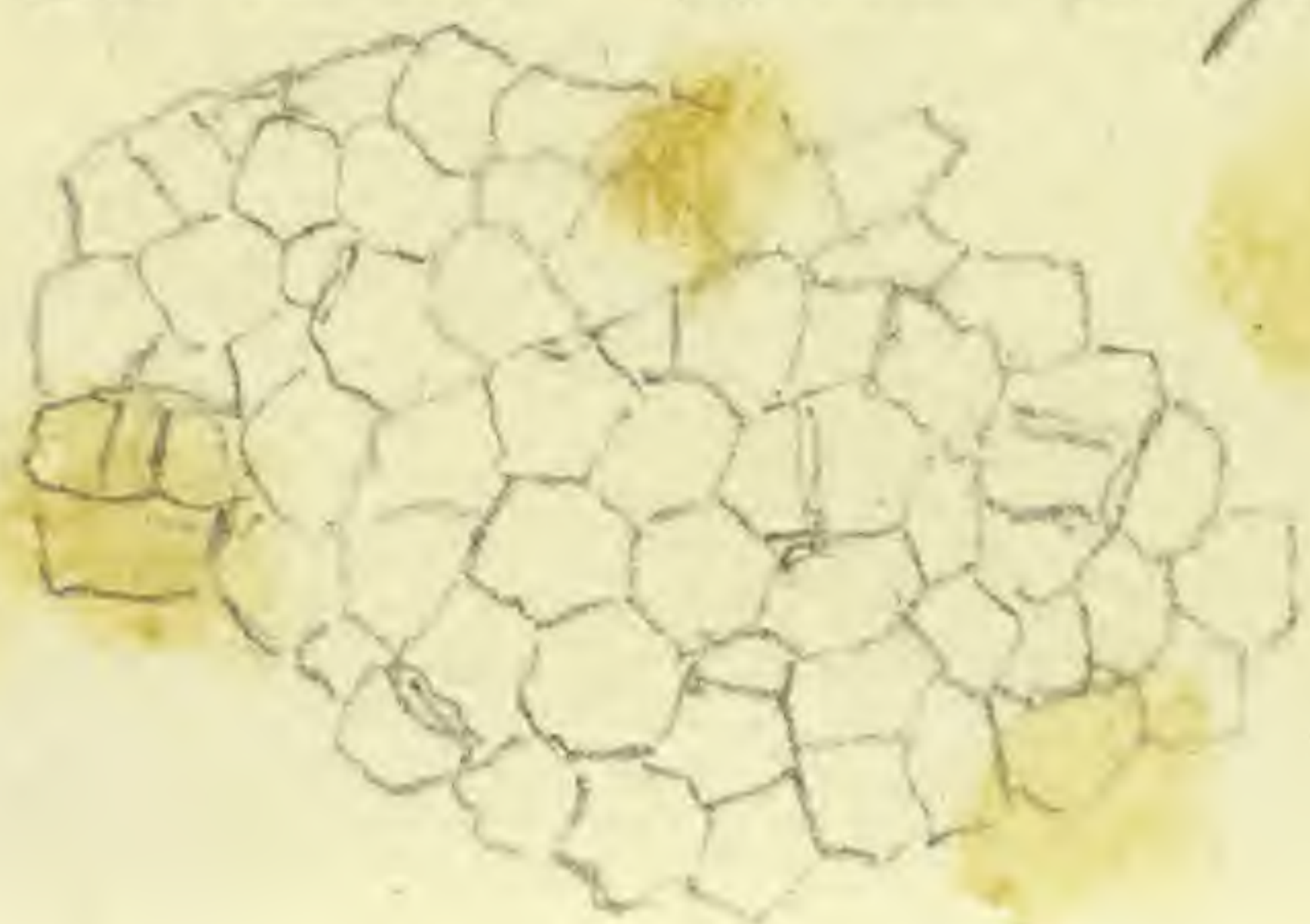
part with larger  
sinuous cells  
and no stomata

both treated with Polash



paracytic  
under  
lower  
epidermis

Lower convex purple surface



Starch granules x 785



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